OWNER'S MANUAL

MODEL 24SII

DATA EXCHANGE SYSTEM

Rev. 2.00

BayTech publication #U140E084-01

Thank you for selecting a BayTech Model 24SII Data Exchange System.

The data provided in this Owner's Manual explains the various ways you can operate your unit and configure it to your computer system. We suggest that you read this manual carefully before attempting to install the Model 24SII and that you place special emphasis on correct cabling and configuration. If you have any problems with your installation, please contact a BayTech applications engineer for assistance toll-free at 1-800-523-2702.

BayTech also manufactures data communications devices that provide port sharing and expansion, networking, port contention, buffered and non-buffered printer sharing; modems and multiplexers. If you would like information on any of these models, please contact BayTech Customer Service. A brief description of other BayTech products is included in the back of this owner's manual.

We welcome any comments you may have about our products and hope you will continue to look to BayTech for your data communications needs.

NOTE: The information contained in this document is subject to change without notice.

Copyright 1992 by Bay Technical Associates, Inc.

LaserShare, Print Master, Telplex, and Tran•x are registered trademarks of Bay Technical Associates, Inc.

IBM, IBM PC, IBM PC/AT, IBM PC/XT are products and registered trademarks of International Business Machines Corporation.

Hewlett-Packard LaserJet and Draftmaster I Plotter are products and registered trademarks of the Hewlett-Packard Company.

WordPerfect is a product of WordPerfect, Inc.

WordStar is a registered trademark of MicroPro International Corp.

Windows is a registered trademark of Microsoft Corp.

All products or company names are trademarks of their respective holders.

TABLE OF CONTENTS

1 GENERAL INFORMATION 1

2 SPECIFICATIONS 5

3 QUICK START 10

4 INSTALLATION 12

4.1 UNPACKING 12
4.2 BAYTECH SOFTWARE UTILITY DISKETTE 12
4.3 POWER 14
4.4 CABLING PRELIMINARIES 14
4.5 FACTORY DEFAULT CONFIGURATION 15
4.6 CONFIGURATION PROCEDURE 16
4.7 PC SET-UP 23

5 CABLING 25

5.1 PARALLEL PORTS 25
5.2 I/O MODULES M24SII-V01 AND M24SII-V03: EIA-232 SERIAL PORTS WITH DB-25 MALE DTE CONNECTORS 27
5.3 I/O MODULE M24SII-V04: EIA-232 SERIAL PORTS WITH DB-25 FEMALE DCE CONNECTORS 30
5.4 I/O MODULE M24SII-V06A: EIA-232 SERIAL PORTS WITH RJ-45 MODULAR CONNECTORS 33

5.5 I/O MODULE M24SII-V07: EIA-232/EIA-422 SERIAL PORTS WITH RJ-45/RJ-11 MODULAR CONNECTORS 35

5.5.1 8-WIRE CONDUCTOR OPERATION..... 36
5.5.2 4-WIRE CONDUCTOR OPERATION..... 38

5.5.2.1 EIA-232 PORTS USING BIDIRECTIONAL PRINTER SHARING MODE 38
5.5.2.2 EIA-232 PORTS USING UNIDIRECTIONAL PRINTER SHARING MODE 39
5.5.2.3 EIA-422 PORTS USING BIDIRECTIONAL PRINTER SHARING MODE 41
5.5.2.4 EIA-422 PORTS USING UNIDIRECTIONAL PRINTER SHARING MODE 42

6 USER-PROGRAMMABLE FEATURES 46

6.1 PORT LOGICAL NAME 46
6.2 PORT DESIGNATION..... 46
6.3 NUMBER OF PRINTERS (M24SII-V02 HIGH SPEED PARALLEL MODULE ONLY)..... 47
6.4 PORT SELECT CODE 47
6.5 PORT SELECT MODE..... 48
6.6 SERIAL PORT CONFIGURATION..... 49
6.7 INPUT INACTIVITY TIMEOUT..... 49
6.8 FORM FEED 50
6.9 I.D. PAGE MESSAGE 50
6.10 DEFAULT PRINTER ASSIGNMENT..... 50

7 OPERATION 51

7.1 COMPUTER-TO-PERIPHERAL OPERATION 51

7.1.1 SHARING A SINGLE PERIPHERAL 51
7.1.2 CONTENDING FOR MULTIPLE PERIPHERALS 52
7.1.3 SPECIFIED SHARING OF MULTIPLE PERIPHERALS 53
7.1.4 BEGINNING AND ENDING A PRINT JOB 54
7.1.5 BUFFERING OF PRINT DATA..... 55
7.1.6 BUFFER CLEARING 57
7.1.7 MINIMUM SIZE PRINT JOB 57

7.2 COMPUTER-TO-COMPUTER OPERATIONS ... 57

7.2.1 INITIATING A COMPUTER-TO-COMPUTER CONNECTION 57
7.2.2 FILE TRANSFER..... 58
7.2.3 MODEM SHARING..... 59

7.3 DATA FLOW CONTROL..... 61

7.3.1 HARDWARE HANDSHAKING 61
7.3.2 XON/XOFF HANDSHAKING 62

7.4 APPLICATION NOTE..... 64
7.5 HP 3000 OPTION..... 65

8 CONFIGURATION 66

8.1 MAIN CONFIGURATION MENU 69
8.2 STATUS 71
8.3 PROGRAM PORT LOGICAL NAME 73
8.4 SET PORT DESIGNATION..... 75
8.5 SET NUMBER OF PRINTERS (M24SII-V02 HIGH SPEED PARALLEL MODULE)..... 77
8.6 PROGRAM PORT SELECT CODE..... 78
8.7 SET PORT SELECT MODE..... 79
8.8 SET SERIAL PORT CONFIGURATION..... 80
8.9 SET INPUT INACTIVITY TIMEOUT..... 85

8.10 ENABLE/DISABLE FORM FEED MODE 87
8.11 PROGRAM I.D. PAGE MESSAGE..... 89
8.12 ENABLE/DISABLE I.D. PAGE MESSAGE..... 90
8.13 SELECT PRINT SCHEDULE FOR I.D. PAGE 92
8.14 PROGRAM DEFAULT PRINTER ASSIGNMENT 94
8.15 PROGRAM MODULE PRINTER SHARING MODE..... 96
8.16 EXIT 96

9 MAINTENANCE..... 97

10 REPACKING FOR SHIPPING 97

11 TECHNICAL SUPPORT 98

12 FEDERAL COMMUNICATIONS COMMISSION RADIO FREQUENCY INTERFACE STATEMENT..... 99

APPENDIX A
CABLING TO MODEL 24SII 100

A.1 BETWEEN M24SII-V03 I/O MODULE AND IBM PC OR PS/2 (DB-25) 100
A.2 BETWEEN M24SII-V03 I/O MODULE AND IBM AT (DE-9) 102
A.3 BETWEEN M24SII-V03 I/O MODULE AND HEWLETT PACKARD LASERJET 104
A.4 BETWEEN MODEL 24SII AND ANY CENTRONICS PRINTER 106
A.5 MODULAR CABLING USING M24SII-V06A I/O MODULE 107
A.6 M24SII-V07 I/O MODULE - EIA-422/EIA-232 PROTOCOL SELECTION 110
A.7 MODULAR CABLING USING M24SII-V07 I/O MODULE 111

A.7.1 RJ-45 (8-WIRE) CABLING 111
A.7.2 RJ-11 (4-WIRE) CABLING USING EIA-232 PROTOCOL AND BIDIRECTIONAL PRINTER SHARING MODE 112
A.7.3 RJ-11 (4-WIRE) CABLING USING EIA-232 PROTOCOL AND UNIDIRECTIONAL PRINTER SHARING MODE 114
A.7.4 RJ-11 (4-WIRE) CABLING USING EIA-422 PROTOCOL 116

APPENDIX B
MODEL 24SII MODULE INSTALLATION..... 117

B.1 MODEL 24SII I/O MODULE INSTALLATION.... 117
B.2 MODEL 24SII MEMORY MODULE INSTALLATION..... 119

APPENDIX C
BUFFER EXPANSION/EPROM UPGRADE..... 121

C.1 M24SII-M01 BUFFER EXPANSION ZIP MODULE INSTALLATION 121
C.2 M24SII-M02 BUFFER EXPANSION SIMM INSTALLATION..... 123
C.3 MODEL 24SII MAIN BOARD EPROM UPGRADE 125
C.4 MODEL 24SII MEMORY MODULE EPROM UPGRADE..... 126
C.5 MODEL 24SII I/O MODULE EPROM UPGRADE 127

APPENDIX D
MECHANICAL LAYOUTS..... 129

D.1 MODEL 24SII FRONT PANEL 129
D.2 MODEL 24SII UNIT ASSEMBLY 130
D.3 MODEL 24SII MAIN BOARD 131
D.4 M24SII-M01 MEMORY BOARD ASSEMBLY.... 132
D.5 M24SII-M02 MEMORY BOARD ASSEMBLY.... 133
D.6 I/O MODULE: 4 PARALLEL PORTS (BAYTECH P/N M24SII-V02) 134
D.7 I/O MODULE: 4 HIGH SPEED SERIAL PORTS (BAYTECH P/N M24SII-V03/V06/V08) 135
D.8 I/O MODULE: 4 HIGH SPEED SERIAL PORTS (BAYTECH P/N M24SII-V07) 136

APPENDIX E
TROUBLESHOOTING..... 137

APPENDIX F
INDEX..... 143

1 GENERAL INFORMATION

The BayTech Model 24SII Data Exchange System (DES) is a high performance peripheral sharing solution offering versatile and flexible connectivity between computers and various peripheral devices. Computers may share plotters, modems, and laser printers, as well as access other computers to share data bases and transfer files. Cost effectiveness is thus achieved through resource sharing among multiple users.

Figure 1 below shows a Model 24SII DES with twenty-four ports installed. This application shows eight local PCs, a remote PC using the BayTech Tran-x LPT-460 high speed parallel/serial converter, and a file server from a LAN sharing a plotter, HP LaserJet Series II printer, HP Laserjet Series IIISI printer, and a BayTech BX2448 2400 bps modem.

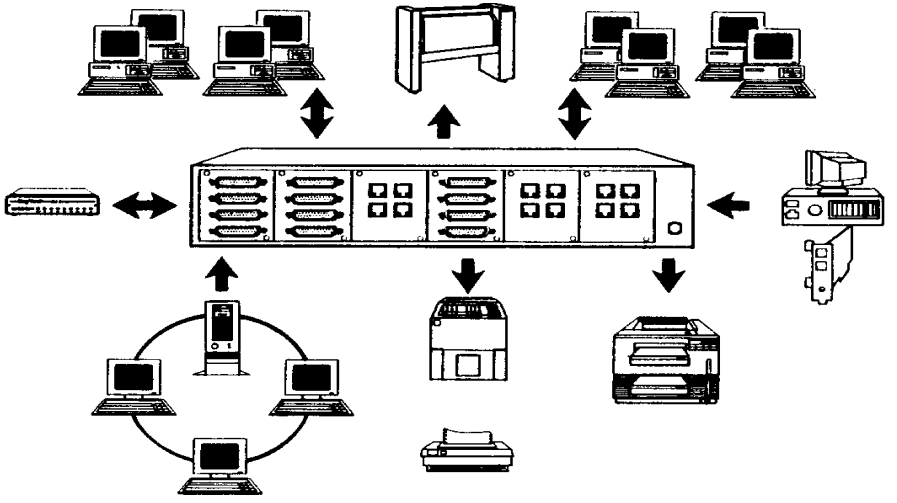


Figure 1

Each port offers high speed data communication with unidirectional serial throughput up to 460k bits per second (bps) and parallel speeds exceeding 60k characters per second (cps). The Model 24SII controller board is used primarily as a data communications bus with throughput capability up to 5.5M bps. The controller board allows direct communication with the connected modules or routes data to the memory module for print spooling. The dynamically allocated buffer is available from 1MB up to 16MB.

Other features of the Model 24SII DES include:

1) High-speed data transfer to handle faster computers and software;

2) Networking between pairs of computers or computers and other devices such as modems, bar code readers, etc.;

3) Optimum flexibility: You select the right combination of serial and parallel ports to meet your needs when ordering, and set any port (other than Port 1 of Module 1) as a computer port or a printer port;

4) Expandability so the system can grow with you;

5) Compatibility with virtually all computers, printers, plotters, modems and other peripherals;

6) RJ-11/RJ-45 modular connectors on the serial ports are optionally available to provide ease in cabling using four or eight conductors.

7) IBM compatible software to allow for peripheral selection from within Windows or graphics programs.

The Model 24SII's generous built-in buffer also saves valuable computer time by spooling data until the printer or plotter can receive it, keeping your users and computers working full time instead of waiting. The spooling buffer on the Model 24SII DES can range from 0 MB to 16MB in 1MB or 4MB increments. The buffer is field upgradable. For printer and plotter sharing applications, you must have a minimum of 1MB installed on the initial purchase.

You may program the following features to meet the requirements of your application: the Port Designation (computer or printer) for each port, the individual Serial Port Configuration (baud rate, word size, stop bits, parity, and XON/XOFF), the Printer Sharing Mode (high speed serial modules only), the 4-Wire/8-Wire Operation (M24SII-V07 high speed serial module only), the Port Logical Names, the Input Inactivity Timeout, the Port Select Code, the Port Select Mode, the Form Feed Mode, the I.D. Page Message, and the Default Printer Assignment. Programming of these features is easily accomplished via the menu-driven configuration mode, and all changes are saved permanently in non-volatile memory. BayTech provides terminal emulation software for this purpose.

The number of ports on the Model 24SII DES can range from four to twenty-four in multiples of four. The actual number of ports is determined by the number of I/O modules installed. Each I/O module has four (4) ports. The Model 24SII DES can have a maximum of six (6) modules installed. You may install additional I/O modules after initial purchase to increase the number of ports on your Model 24SII DES.

We will refer to individual ports on the Model 24SII DES by module number and port number. The module number for an individual port may range from 1 to 6. The port number for an individual port may range from 1 to 4, with Port 1 being the top port. For example, we refer to the master configuration port as Port 1 of Module 1. Module 1 inserts to the slot marked "Module 1" on the top of the back panel.

BayTech sells a high speed serial module for the Model 24SII DES which supports EIA-422 protocol (M24SII-V07). This allows for long cable distances using RJ-11 (4-wire) or RJ-45 (8-wire) modular cabling. Use of the BayTech Tran-x LPT-460 or PS-02 high speed parallel/serial converter products will allow your PC to transmit data at 460k bps using cable lengths up to 1000 feet. The same set up will allow your cable distance to be up to 4000 feet if your Tran-x card is configured to transmit data at 115k bps.

Figure 2 shows a PC with the Tran-x LPT-460 card and a PC with the Tran-x PS-02 external module connecting to the M24SII-V07 module via modular cabling.

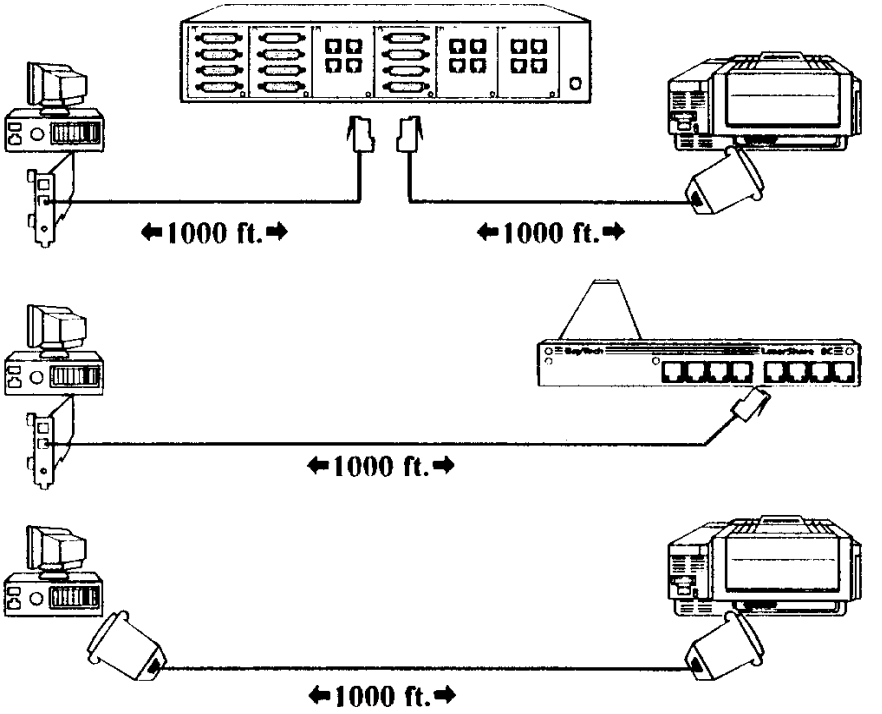


Figure 2

2 SPECIFICATIONS

BASE UNIT: Supports 24 ports of communication at up to 5.5M bps total throughput speeds.

I/O Modules: Four ports per module. Maximum 6 modules per unit. Must have a minimum of 4 serial ports per unit.
Maximum Input Power Rating: 115 VAC, 50/60 Hz, .3A; Opt 230 VAC, 50/60 Hz, .2A
Power Supply: +5VDC, 1.5A; +12VDC, 0.2A; -12VDC, 0.2A available.
Power Requirement: 115 VAC, 50/60 Hz, .3A; Optional 230 VAC, 50/60 Hz, .2A.
Single Channel Bus Speed: 5.5M bps.
Configuration memory: 8KB non-volatile memory holds power-up default information.
Expansion slots: 6 external; 2 internal.
Edge connecters:20 pin; 6 total, one for each external expansion slot.
26-Pin headers: Two for installation of internal memory or internal modem modules.
Environment: 0° to 55°C temperature; 5% to 95% humidity.
Dimensions: 16¾"w x 10"d x 3½"h.
Weight: 9½ lbs. with 6 modules installed; 8 lbs. with no I/O modules installed.
Indicators: 1 green power LED; 24 red port activity LEDs.
Mounting: Desk-top; rack-mount optional.
Warranty: One year on parts and labor.

MEMORY BOARD: 1 board standard - no memory installed. Expandable to 16MB by one megabyte or four megabyte increments.

FACTORY POWER-UP DEFAULT CONFIGURATIONS:

Serial ports:

Baud rate: 9600.
Word size: 8 bits.
Parity: None.
XON/XOFF: Off.
Printer sharing mode (high speed serial modules only): Bidirectional.
4-Wire/8-Wire Operation (M24SII-V07 high speed serial module only): 8-wire.

Logical Name: Device A to D on each module.
Input Inactivity Timeout: 20 seconds.
Port Designation: Port 2 of Module 1- printer port; all other ports - computer ports.
Default Printer Assignment: 0 for all computer ports (contention mode).
Port Select Code: $SELECT.
Printer Select Mode: Anytime.
Form Feed Mode: Disabled.
I.D. Page Message: "This print job is for:".
I.D. Page Message Schedule: Before each print job.
I.D. Page Message Enable: Off.
Minimum Size Print Job: 3 characters.

USER-PROGRAMMABLE CONFIGURATIONS:

Easy to configure using on-screen menu. Choices are saved in non-volatile memory to become the new power-up default configuration.

Configurable Through any Serial Computer Port:

Baud rate for bidirectional transfer (high speed serial modules only)*: 300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 115.2k.
Baud rate for unidirectional transfer (high speed serial modules only)*: 9600, 115.2k, 230.4k, 460.8k.
***** Option configurable per port.

Printer Sharing Mode (high speed serial modules only): (per module) Unidirectional or bidirectional.

4-Wire/8-Wire Operation (M24SII-V07 high speed serial module only: 4-wire or 8-wire.

Word size*: 7 or 8 bits.

Parity*: Even, odd or none.

Stop bits*: 1 or 2.

XON/XOFF*: Enabled or disabled individually for transmit and receive in bidirectional mode.

Input Inactivity Timeout*: 0 to 200 seconds.

Port Logical Name*: Maximum 16 characters.

Port Select Mode*: Mode A = Port selection anytime while printing; Mode B = Port selection at beginning of printing.

Form Feed Mode*: No form feed; Form feed at beginning of printing only; Form feed at end of printing only; Form feed at both beginning and end of printing.

I.D. Page Enable: on or off.

Default Printer Assignment: Can be any module and port number of a printer port.

***** Option configurable per port. Users connected to any module other than Module 1 may configure these options for their module only.

<u>Configurable Through Host Port Only:</u>

Port Select Code: 1 to 8 ASCII characters.

Port Designation: Computer port or printer port.

Number of Printers (M24SII-V02 high speed parallel module only): 0 to 4.

I.D. Page Message: Maximum 40 characters.

I.D. Page Message schedule: Beginning of printing or end of printing.

MODULES

4 PORT HIGH SPEED SERIAL EIA-232 DES

Interface: Asynchronous EIA-232, -12v mark, +12v space. Full duplex.
Connectors: Available in DB-25 male DTE (BayTech part #M24SII-V03), DB-25 female DCE (BayTech part #M24SII-V04 or RJ-45 (Baytech part #M24SII-V06A).
Handshaking bidirectional: CTS/DTR; selectable XON/XOFF.
Handshaking unidirectional: CTS/DTR.
Flow Control Buffer: 1k character input/output.
Speed bidirectional transfer: 300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 115.2k.
Speed unidirectional transfer: 9600, 115.2k, 230.4k, or 460.8k.
Power Consumption: +5VDC. 150mA; +12VDC, 25mA; -12VDC, 25mA.
Dimensions: 3.3"h x 2.4"w.

4 PORT HIGH SPEED SERIAL EIA-422 DES

Interface: Asynchronous EIA-422 or EIA-232 (hardware selectable), full duplex.
Connectors: RJ-45 (8-wire) with built-in RJ-11 (4-wire) (BayTech part #M24SII-V07).
Handshaking bidirectional: HSO/HSI (EIA-422) or CTS/DTR (EIA-232) handshaking lines; selectable XON/XOFF.
Handshaking unidirectional: HSO/HSI (EIA-422) or CTS/DTR (EIA-232).
Flow Control Buffer: 1k character input/output.
Speed bidirectional transfer: 300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 115.2k.
Speed unidirectional transfer: 9600, 115.2k, 230.4k, 460.8k.
Power Consumption: +5VDC. 150mA; +12VDC, 25mA; -12VDC, 25mA.
Dimensions: 3.3"h x 2.4"w.

4 PORT HIGH SPEED PARALLEL DES

Interface: Centronics protocol.
Connectors: DB-25 female (BayTech part #M24SII-V02).
Handshaking: BUSY (pin 11); ACK (pin 10) -out only.
Flow Control Buffer: 1k character input/output.
Speed: 60k cps output; 58k cps input.
Dimensions: 3.3"h x 2.4"w.

3 QUICK START

This section provides basic installation instructions for persons knowledgeable in the area of computer equipment installation. In this section, we assume that the Model 24SII DES has never been configured (i.e., all settings are factory default values). We will refer to specific sections in this manual for more in-depth instructions on installation, operation, and configuration. Please use the following procedure:

Step	Instructions/Application Questions	Action/Special Instructions
1	Determine how many and what type of modules are installed on the Model 24SII DES. Identify which modules are serial and which modules are parallel. Serial modules are labeled as "232" or "422" and parallel modules are labeled as "PAR" on the back.	Proceed to Step 2.
2	Determine which ports on the Model 24SII DES your devices will be connected to (parallel or serial). Also determine the necessary Port Designations on the Model 24SII DES (computer or printer). Computers and modems connect to ports designated as computer ports. Printers and plotters connect to ports designated as printer ports.	Proceed to Step 3.
3	Does your application call for printer or plotter sharing between multiple computers and just <u>one</u> printer or plotter?	If no, proceed to Step 5. If yes, proceed to Step 4.
4	Will your <u>single</u> printer or plotter connect to the Model 24SII DES in serial?	If no, proceed to Step 6. If yes, there is no need to reconfigure any Port Designations on the Model 24SII DES. You will connect your serial printer or plotter to Port 2 of Module 1. Proceed to Step 7.
5	For multiple printer/plotter applications, you will need to access configuration mode and change the *Port Designation* of the ports to which your printers and/or plotters will connect from computer ports to printer ports.	Port 2 of Module 1 is the factory designated printer port. This is a <u>serial</u> port. If you have any serial printers or plotters, you may connect one of them to this port. If you do not have a serial printer or plotter, you will need to reconfigure the Port Designation for Port 2 of Module 1 to a computer port. Proceed to Step 7.
6	If your application calls for multiple computers sharing just <u>one</u> parallel	Proceed to Step 7.

Step	Instructions/Application Questions	Action/Special Instructions
	printer or plotter, you must reconfigure the Port Designation of a parallel port on the Model 24SII DES to be a printer port. Additionally you must reconfigure the Port Designation for Port 2 of Module 1 to a computer port.	
7	Will you be connecting any serial devices that will communicate with serial parameters different than 9600 baud, 8 data bits, 1 stop bit, no parity, and XON/XOFF handshaking disabled (e.g., 2400 bps external modem)?	If yes, proceed to Step 9. If no, proceed to Step 8.
8	Do you have to reconfigure any Port Designations on the Model 24SII DES (see Steps 4, 5, or 6).	If yes, proceed to Step 9. If no, proceed to Step 10.
9	If you need to reconfigure the Model 24SII DES with respect to Port Designation and/or Serial Port Configuration, you will need to access configuration mode to make the appropriate changes.	Please see *Section 4.6* for instructions and then proceed to Step 10.
10	Proceed with cabling your devices to the appropriate ports on the Model 24SII DES.	See *Section 5* for more cabling information and *Appendix A* for recommended cabling pin outs. Proceed to Step 11.
11	If you will be using the BayTech software to select between peripherals, please see the README file created by running the INSTALL program. Please see *Section 4.2* for instructions.	Proceed to Step 12.
12	If using IBM compatible PCs, see *Section 4.7* for hints on PC set-up.	If you have any questions, please call a BayTech Applications Engineer at 1-800-523-2702.

4 INSTALLATION

The information contained in this section is provided as an overview and guide to configuration and set-up of the Model 24SII DES. The appropriate sections of the manual should be referred to for more in-depth information pertaining to a specific function or for alternative methods.

4.1 UNPACKING

After opening the box, check the packing list that comes with the Model 24SII DES to ensure that you have received all components. At a minimum you should have received the unit, this manual and any applicable addendums, and a software utility diskette. Also check the unit to make certain that it did not incur damage during shipping. If items are missing or damage did occur, please contact BayTech technical support at 800-523-2702.

4.2 BAYTECH SOFTWARE UTILITY DISKETTE

BayTech provides utility software to assist you in configuring the Model 24SII DES. There are three peripheral selection programs included to provide easy device selection from text mode, graphics mode, or Windows.

IMPORTANT: Copy the BayTech original diskette onto a blank diskette and store the original in a safe place. Read your operating system's manual for copying instructions.

The software utility diskette provided with your Model 24SII DES comes with an automatic installation program called INSTALL. You must use this program to extract the compressed files associated with your unit. INSTALL automatically copies and expands the hidden files.

To run INSTALL, use the following procedure:

1. Insert the software utility diskette into drive A (or drive B) and from the prompt type **INSTALL** followed by **ENTER**.

2. A menu titled "Drive & Directory Definitions" will appear on your screen. This menu will display the *Source Drive*, *Destination Drive*, and *Destination Directory*. The Source Drive is the floppy drive where the diskette is inserted (default is drive A). The Destination Drive is the drive where the expanded files will copied to (default is drive C). The Destination Directory is the directory where the files will copied to (default is BAYTECH). If the default parameters do not match your application, you may either use the TAB key or a mouse to change fields and type in the desired parameters. Once you have entered the appropriate values, select "OK".

3. A menu will appear on your screen titled "Series Definition". This menu will contain choices for the type of BayTech product you have purchased. Highlight "Model 24 Series" with the arrow keys or mouse followed by "OK".

4. A menu titled "Printer Selection Programs" will appear on your screen. You are given three selections: RAMEXEC, RAMTSR, and WNDEXEC. Choose RAMEXEC if your PC runs non-Windows programs that do <u>not</u> operate in graphics mode. Choose RAMTSR if your PC runs non-Windows programs which operate in graphics mode. Choose WNDEXEC if your PC runs under WINDOWS. Once you have selected the appropriate printer selection program, choose the "OK" selection.

5. When INSTALL is finished, you may review the instructions for the relevant files by referring to the README file copied to the destination subdirectory. To view the README file on your screen, enter the command **TYPE README** from your subdirectory prompt. To print this file, enter the command **COPY README LPT1:** from your subdirectory prompt.

4.3 POWER

The standard Model 24SII DES requires 115 VAC, 50/60 Hz. power and comes with a three-prong power cord. Do not attempt to operate the unit with a two-prong socket or adaptor. 230 VAC, 50/60 Hz. is optional.

The Model 24SII DES powers-up when you press the power switch, located on the front of the unit, to "ON". A green LED on the front panel will illuminate when power is applied.

CAUTION: Power should be turned off anytime cables are to be installed or removed. Make sure the power is turned off and the unit is unplugged before removing the cover and attempting to make any internal changes.

4.4 CABLING PRELIMINARIES

Before you proceed with cabling, determine which type of I/O modules you have installed on the Model 24SII. The module type is marked on the top of the module panel. Parallel ports have DB-25 female connectors. Serial ports have either DB-25 male DTE, DB-25 female DCE, or RJ-45 modular connectors. Next, determine what device will be connected to each available port, whether the device will be connected to a serial or parallel port, and whether the device will connect to a computer port or printer port. Finally, you should obtain the correct cables to connect your equipment to the Model 24SII.

NOTE: Any port (except Port 1 of Module 1) may be designated as a computer port or a printer port. However, if computer-to-computer communication will be required, the computers that will be communicating must both be connected to serial ports to allow full duplex communication. Printers and plotters are connected via cable to user-assigned printer ports on the Model 24SII DES. Computers and modems are connected via cable to user-assigned computer ports.

NOTE: If you are interfacing your equipment to the M24SII-V07 I/O module, determine if you will use 4-wire or 8-wire cabling.

Refer to *Section 5* and *Appendix A* to ensure you have all the correct cables to fully connect your system.

Connect the proper serial cable between COMx (where x = 1, 2, 3, or 4) of a PC, or dumb terminal, to Port 1 of Module 1 (the master configuration port). All other cables can be connected after the system is configured (see *Section 8*).

4.5 FACTORY DEFAULT CONFIGURATION

From the factory, the Model 24SII Data Exchange System is set up with Port 1 of Module 1 (serial) designated as a computer port. Port 1 of Module 1 is the master configuration port and **must** always be a serial port. Several parameter settings are set only through this port. Port 2 of Module 1 (serial) is factory-designated as a printer port. All other installed ports are factory-designated as computer ports. You may designate in the configuration mode which ports are computer ports and which are printer ports if required.

Other factory-default settings are:

Input Inactivity Timeout: 20 seconds
Port Select Code: $SELECT
Port Select Mode: Mode A (printer selection anytime while printing).
Form Feed Mode: disabled
I.D. Page Message: disabled
Port Logical Name(s): set as Device A, Device B, etc.
Default Printer Assignment: 0 for all computer ports (contention mode).

Serial ports power-up from the factory at:

9600 baud rate
8 bit word size
1 stop bit
no parity
XON/XOFF disabled
Printer sharing mode: Bidirectional.
4-Wire/8-Wire Operation (M24SII-V07 high speed serial module only): 8-wire.

If your application does not match the factory setup of the Model 24SII DES, you must first reconfigure the Model 24SII DES by entering the configuration mode (see *Section 8*). For example, if your application calls for printer sharing between more than one printer or if you are sharing a single parallel printer, you must reconfigure the Model 24SII's Port Designation. If your application does match, you may connect all required cables, apply power, and begin using your Model 24SII Data Exchange System.

4.6 CONFIGURATION PROCEDURE

If your application requires that you reconfigure the Model 24SII DES different from the factory default configuration, determine which parameters must be changed (i.e., baud rate, word size, Port Designation, etc.). All features of the Model 24SII DES are configured one module (four ports) at a time using a serial terminal or PC connected to the master configuration port (Port 1 of Module 1).

The configuration mode of the Model 24SII DES is menu-driven. The configuration menus are accessed by sending a three-character sequence to the master configuration port. The three-character sequence consists of *Control-T*, **Capital C**, followed by the desired module number (1 to 6).

For example, if you wish to configure Module 1, you would send the following: ***<Control-T>*C1**

If using an IBM PC or compatible to configure the Model 24SII DES, first make a copy of the BayTech supplied support software disk and store the original in a safe place. (Refer to your DOS manual for copy instructions). You will be using the TERM program created by running the INSTALL program (see *Section 4.2*) to change the default configuration of the Model 24SII DES. Any terminal emulation program supplied by another manufacturer may also be used. Make sure your PC is connected to Port 1 of Module 1 with the appropriate serial cable. Use the following procedure:

1. From the BAYTECH subdirectory prompt enter:
   a:\term↵

   The program will respond with an identification block and then a configuration menu for the PC COM port.

PC's Configuration					Handshaking				
Port	Baud Rate	Word Size	Stop Bits	Parity	RTS	CTS	DSR	DCD	DTR
Com1	9600	8	1	N	Hi	Hi	Hi	n/a	Hi

   You are now in the terminal emulation mode with full duplex communication. Any characters you type from the keyboard will be transmitted out of the PC COM port to the Model 24SII DES. They will not appear on the CRT screen. Any characters received from the Model 24SII DES by the PC COM port will be displayed on the CRT screen.

2. Ensure the displayed PC Configuration is correct. If not, enter ALT-C to change. For example, if you have your serial cable physically connected to COM2 on your PC, first type ALT-C followed by the up arrow key and then ENTER to have the TERM program switch to COM2.

3. Refer to the upper right hand corner of the screen for Handshaking line status. RTS, CTS, DSR, and DTR should all be HIGH. The DCD line is not looked at by the terminal emulation program therefore its status can be ignored. If these signals are not high at this point, check to ensure the correct cable is connected.

4. Ensure that all red LEDs on the front of the Model 24SII DES are **off** (all ports off-line), and that the green 'power on' LED is illuminated.
   You may now configure the Model 24SII DES from the PC keyboard.
   NOTE: Keyboard entries must be CAPITAL LETTERS. Put your keyboard in the CAPS LOCK mode.

5. Depress function key: **F1** followed by the module number that you wish to configure (**1** to **6**).

   NOTE: The **F1** key in TERM sends the character sequence *Control-T* (14 Hex) followed by the ASCII capital **C** character (43 Hex).

The main configuration menu for the selected module will appear. From this point on, configuration of the Model 24SII DES will be accomplished by following the plain-English menus that will prompt you. Enter the letter corresponding to the desired operation. Refer to the chart provided on the following page for assistance.

NOTE: Once F1 and the desired module number are sent, the LEDs for Port 1 and the ports for the selected module on the front of the Model 24SII DES will illuminate and will remain illuminated while you are in configuration mode. If only two LEDs illuminate, if no LEDs illuminate, or if no menus appear, this indicates that an incorrect character sequence has been received. If this occurs, wait for all red LEDs to go out and re-send F1 followed by the desired module number (1 to 6).

Refer to *Section 8* for in-depth instructions on configuration options.

Model 24SII DES CONFIGURATION GUIDE

Menu Options	Factory Default	User Options	Notes
Status	n/a	n/a	Use to review the status of the current configuration of the Model 24SII DES.
Program Port Logical Name	Device A Device B Device C .....etc.	Max of 16 characters Make logical names easily identifiable by users, i.e. "Main IBM", "Jill PC", "Laser Pntr"	These are the Device Names that print after the I.D. Page Message, if enabled. You may wish to use these same Logical Names when running the PC SETUP program.
Set Port Designation	Port 2 = printer All others = computer	Port 1 of Module 1 must always be configured as a computer port. All ports may be designated as computer ports. Printers should be connected to ports designated as printer ports. Plotters should be connected to ports designated as printer ports. Modems should be connected to ports designated as computer ports.	When the Port Designation is changed for any port, the printer assignment on all computer ports automatically resets to zero, putting the computers in the contention mode.
Program Port Select Code	$SELECT	Max of 8 ASCII characters. Non-printable characters are acceptable, but they will not appear in the status menu.	Ensure the Port Select Code is made up of unique characters to prevent changing printers in the middle of a print job.
Set Port Select Mode	Anytime	(A) Anytime: Model 24SII DES will change printers before the end of the specified timeout period if a Port Select Code is recognized. (B) Beginning: Model 24SII DES will change printers only at the beginning of a print job.	Anytime: Required for LAN File Servers. Beginning: Prevents recognition of the Port Select Code if it appears in the middle of a document, i.e. some graphics programs may use $SELECT to perform some other function.
Set Serial Port Configuration	Baud Rate: 9600	Baud Rate: 300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 115.2k, 230.4k,	The Model 24SII DES will automatically translate between devices using

Menu Options	Factory Default	User Options	Notes
	Word Size: 8 Stop Bits: 1 Parity: none XON/XOFF Xmit: off XON/XOFF Recv: off Printer Sharing Mode: bidirectional 4-Wire/8-Wire Operation: 8-wire	460.8k Word Size: 7 or 8 bits Stop Bits: 1 or 2 Parity: even, odd, none XON/XOFF: enabled or disabled individually for transmit and receive Printer Sharing Mode may be unidirectional or bidirectional 4-Wire/8-Wire Operation may be set to 4-wire or 8-wire	different serial protocols and will do serial/parallel conversions. XON/XOFF for Xmit should always be set to OFF when sending graphics or binary data. Programmable for high speed serial modules only. Max baud rate using bidirectional is 115.2K bps, max baud rate using unidirectional is 460.8K bps. Programmable for the M24SII-V07 high speed module only.
Set Input Inactivity Timeout	20 seconds	0 to 200 seconds	A long timeout setting for a PC will prevent other PCs from accessing the port it is connected to, while allowing the connected PC to send numerous print jobs. If you do not want to wait a long time between various users print jobs, it is suggested that you send a disconnect code at the end of the print job to override the timeout. A longer timeout may be required when sending large text files, graphics files, or downloading fonts. A zero will disable the Input Inactivity Timeout and the end of a print job will occur only when codes are manually entered and sent from the connected PC. **WARNING:** Do not set timeout to zero seconds when Port Select Mode B

Menu Options	Factory Default	User Options	Notes
			(beginning) has been selected. Mode B recognizes the end of a print job **only** by inactivity timeout periods. It will not recognize manual disconnect codes.
Enable/Disable Form Feed Mode	Beginning: off Ending: off	Beginning: on or off Ending: on or off	Used if you wish to have the Model 24SII DES automatically sent a form feed character before and/or after each print job. Helpful when sending DOS print jobs to an HP Laserjet printer.
Program I.D. Page Message	"This Print Job is for :"	Max 80 characters. ex. "PLEASE ROUTE THIS PRINT JOB TO:" Printer commands to increase the font size used for this page may be entered as part of the 80 characters and will not appear on the printed page.	The same message is sent for each device if I.D. Page Message is enabled for that port. It will automatically be followed with the logical port name of the PC sending the print job.
Enable/Disable I.D. Page Message	off	on or off	
Select Print Schedule for I.D. Page	Before print job	Before print job or after print job	These should all be set the same (beginning or end) for ports where I.D. Page Message is enabled to make it easier to determine whose print job it is.
Default Printer Assignment	0-0 (contention mode) for all computer ports.	You may configure the Default Printer Assignment to be any module and port number of a port defined as a printer port.	Any print job sent without a port select sequence after power-up will automatically be routed to the default printer.

4.7 PC SET-UP

This section is intended to provide instructions on how to set up your PC to work with the Model 24SII DES with respect to the BayTech software (if you intend to use it) and special considerations to keep in mind when connecting your PC to the Model 24SII DES in parallel or in serial.

If you intend to use the RAMEXEC (text mode) or RAMTSR (graphics mode) hot key program to select between multiple peripherals, you should have both the RAMEXEC and SETUP or the RAMTSR and SETUPCFG files copied onto the hard drive of your PC.

NOTE: If you have a working copy of RAMEXEC (or RAMTSR) from a PC that has already configured RAMEXEC (or RAMTSR) for your application (i.e., added all the appropriate peripheral device selections), there is no need to copy the SETUP (or SETUPCFG) file to the new PC. SETUP (or SETUPCFG) is required only if you want to make changes to your current version of RAMEXEC (or RAMTSR).

You would typically add RAMEXEC (or RAMTSR) to your PC's AUTOEXEC.BAT file. The RAMEXEC (or RAMTSR) command should be located after the PATH command and before any DOS shell commands. If you copy the BayTech software onto a subdirectory, the subdirectory must be included in your PATH command.

When connecting your PC in serial to the Model 24SII DES, you would typically reroute the parallel output to the serial port via the DOS MODE command:

C:> MODE LPTx: = COMy
(where x=1, 2 or 3; y=1 or 2).

This command should be part of your AUTOEXEC.BAT program.

You will also need to change the serial port configuration of your PC COM port to match that of the Model 24SII's Serial Port Configuration. If you will be using the Model 24SII's factory default Serial Port Configuration (9600 baud, 8 data bits, 1 stop bit, and no parity), this is accomplished via the following DOS command:

Mode COMx: 9600,n,8,1,P↵

where x is the number of the appropriate com port. This command should be part of your AUTOEXEC.BAT program.

EXAMPLE: Suppose you are connecting your PC's COM1 port to the Model 24SII DES in serial and you intend to use the RAMEXEC hot key software which has been copied to a subdirectory called BAYTECH. Your AUTOEXEC.BAT program would need contain the following:

```
.
.
PATH=C:\...;C:\BAYTECH
MODE LPT1: =COM1:
MODE COM1: 9600,N,8,1,P
RAMEXEC
.
.
```

The vertical dots before the PATH command and after the RAMEXEC command represent other commands that may be part of your AUTOEXEC.BAT file. The horizontal dots shown in the PATH command represent other subdirectories that may be part of the PATH command.

NOTE: The DOS MODE command will support a maximum baud rate of 9600 bps. BayTech supplies a program, SMODE.EXE, which allows you to set your PC com port for serial speeds up to 115,200 bps. Please see *Section 4.2* for instructions to obtain the SMODE command from the supplied utility diskette. The instructions for SMODE are contained in the README file created by running the INSTALL program.

If you are connecting your PC to the Model 24SII DES in serial and are not going to use the BayTech software, you would not need to modify your PATH command or include the RAMEXEC command in the AUTOEXEC.BAT file.

If you are connecting your PC in parallel and intend to use the BayTech software, you would not include either MODE command in the AUTOEXEC.BAT file (unless you are using your com port for another application outside the Model 24SII DES).

If you are connecting your PC in parallel and are not going to use the BayTech software, there is no need to modify your AUTOEXEC.BAT file. Just print normally after you cable the PC to the Model 24SII DES and configure the Model 24SII DES (if required).

5 CABLING

5.1 PARALLEL PORTS

Parallel ports on the Model 24SII DES have DB-25 female connectors. A straight, DB-25 male-to-male cable is required between each IBM PC computer (or compatible) and the parallel ports on the Model 24SII DES.

CAUTION: Some standard EIA-232 DB-25 cables may have Pin 1 grounded to connector shell. Since there is a strobe line on Pin 1 in Centronics protocol, this ground must be removed if the cable is used between an IBM PC and the Model 24SII DES in parallel.

A DB-25 male to Centronics cable is required between each printer having a Centronics connector and the Model 24SII DES (same as IBM PC to Centronics cable).

NOTE: BayTech will guarantee parallel data transmission for cable lengths up to 15 feet. If you require a longer distance, it is suggested that you either use parallel line drivers (such as Tran-x), extended distance parallel cables, or consider a serial connection.

The pin assignment for the DB-25 connector is similar to the IBM PC parallel connector and uses the following signals for communication:

DB-25 STANDARD CENTRONICS TTL LEVELS BayTech Cable part # MC25S010	
PIN #	SIGNAL
1	- Strobe
2	+Data Bit 0
3	+ Data Bit 1
4	+ Data Bit 2
5	+ Data Bit 3
6	+ Data Bit 4
7	+ Data Bit 5
8	+ Data Bit 6
9	+ Data Bit 7
10	- Acknowledge
11	+ Busy
12	+ P. End (out of paper)
13	+ Select
14	- Auto Feed
15	- Error
16	- Initialize Printer
17	- Select Input
18-25	Ground

5.2 I/O MODULE M24SII-V03: EIA-232 SERIAL PORTS WITH DB-25 MALE DTE CONNECTORS

IMPORTANT: Determine whether the devices which will connect to the Model 24SII DES are DTE (Data Terminal Equipment) or DCE (Data Communication Equipment). The following devices are generally DTE: terminals, printers, computers like the IBM PC. The following devices are DCE: modems and some computers.

If your device transmits data on Pin 2 or receives data on Pin 3, it is DTE. If your device receives data on Pin 2 and transmits data on Pin 3, it is DCE. However, to verify the interface requirements, please refer to the Owner's Manual for your device.

The serial ports on the M24SII-V03 I/O module has DB-25 male DTE connectors and use the following signals for communication:

DTE PORT SIGNALS			
PIN#	EIA-232	DIRECTION	DESCRIPTION
1	PGND	----	Protective ground
2	TX	Output	Data out
3	RX	Input	Data in
4	RTS	Output	+ Voltage when Model 24SII DES powers-up
5	CTS	Input	Model 24SII DES transmit enabled when +12V. Internally enabled if no wire connected.
7	SGND	----	Signal ground
20	DTR	Output	- Voltage when Model 24SII DES print buffer full.

If you are interfacing a DCE device to the Model 24SII DES (DTE), you must use a one-to-one or straight cable as shown in *Figure 3* on the following page. If you are interfacing a DTE device to the Model 24SII DES (DTE), you must use a crossed cable as shown in *Figure 4* on the following page.

When using XON/XOFF protocol, it may be desirable to use cables with only Tx, Rx and GND connected. Input handshaking lines are enabled if nothing is connected allowing the system to operate with only Tx, Rx and GND connected.

CAUTION: Do not attempt to use a serial cable on a parallel port. Since an EIA-232 serial port usually carries a potential of +12 and -12 volts, plugging a serial cable from that port into a parallel port may cause damage to the parallel port.

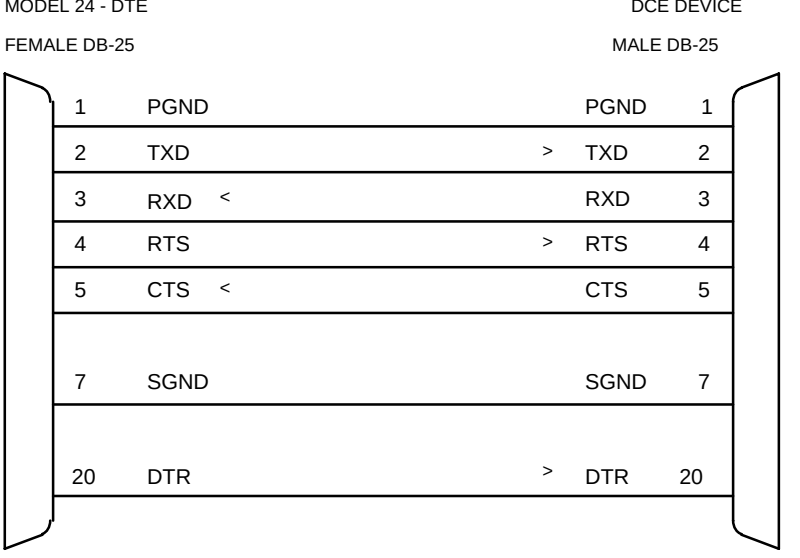


Figure 1-DTE Model 24 to DCE Device

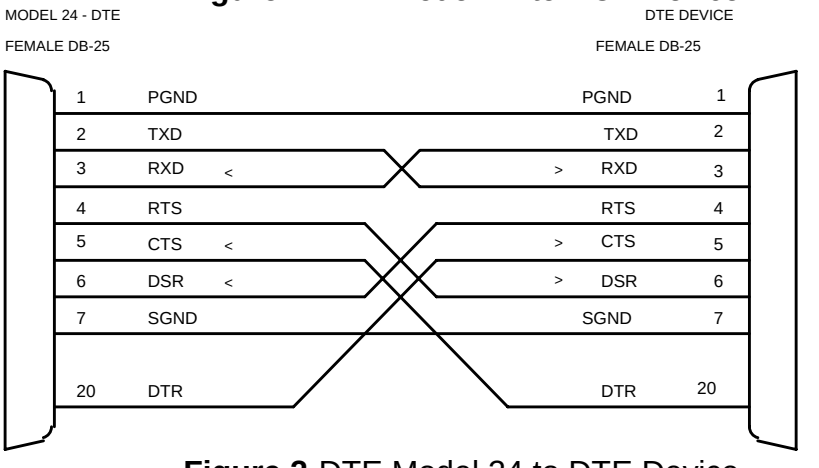


Figure 2-DTE Model 24 to DTE Device

NOTE: Please refer to *Appendix A* for recommended cabling diagrams between the Model 24SII DES and various computers and printers.

5.3 I/O MODULE M24SII-V04: EIA-232 SERIAL PORTS WITH DB-25 FEMALE DCE CONNECTORS

IMPORTANT: Before you proceed with cabling, you must know whether the devices to which you will connect the Model 24SII DES are DTE (Data Terminal Equipment) or DCE (Data Communication Equipment). The following devices are generally DTE: terminals, printers, computers like the IBM PC. The following devices are DCE: modems and some computers.

If your device transmits data on Pin 2 or receives data on Pin 3, it is DTE. If your device receives data on Pin 2 and transmits data on Pin 3, it is DCE. However, to verify the interface requirements, please refer to the Owner's Manual for your device.

The serial ports on the M24SII-V04 I/O module has DB-25 female DCE connectors and use the following signals for communication:

DCE PORT SIGNALS			
PIN#	EIA-232	DIRECTION	DESCRIPTION
1	PGND	----	Protective ground
2	TX	Input	Data in
3	RX	Output	Data out
4	RTS	Input	Internally enabled if no wire connected (normally not used).
5	CTS	Output	-12V when DCE device's buffer is full.
6	DSR	Output	+12V when DCE device powers-up.
7	SGND	----	Signal ground
20	DTR	Input	Transmit enabled when +12 V.

If you are interfacing a DTE device to the Model 24SII DES (DCE), you must use a one-to-one or straight cable as shown in *Figure 5* on the following page. If you are interfacing a DCE device to the Model 24SII DES (DCE), you must use a crossed cable as shown in *Figure 6* on the following page.

When using XON/XOFF protocol, it may be desirable to use cables with only Tx, Rx and GND connected. On the serial ports of a BayTech Model 24SII DES, input handshaking lines are enabled if nothing is connected, allowing the system to operate with only Tx, Rx and GND connected.

CAUTION: Do not attempt to use a serial cable on a parallel port. Since an EIA-232 serial port usually carries a potential of +12 and -12 volts, plugging a serial cable from that port into a parallel port may cause damage to the parallel port.

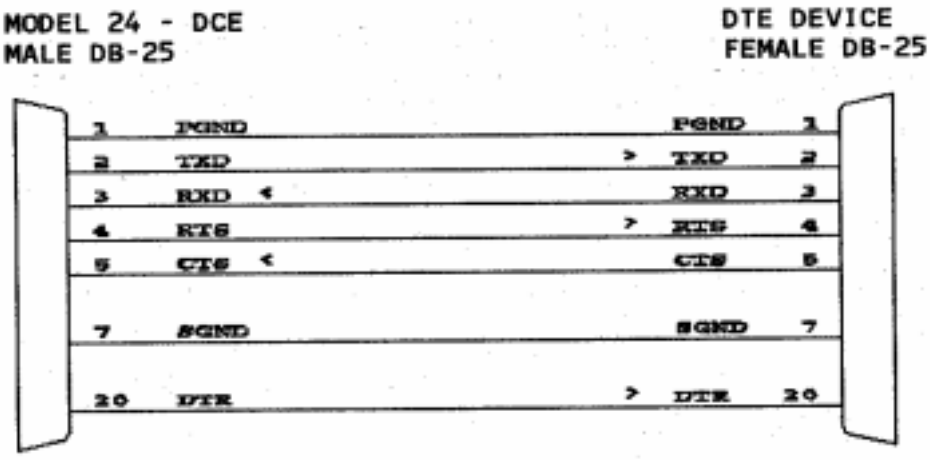


Figure 5-Model 24SII (DCE) to DTE Device

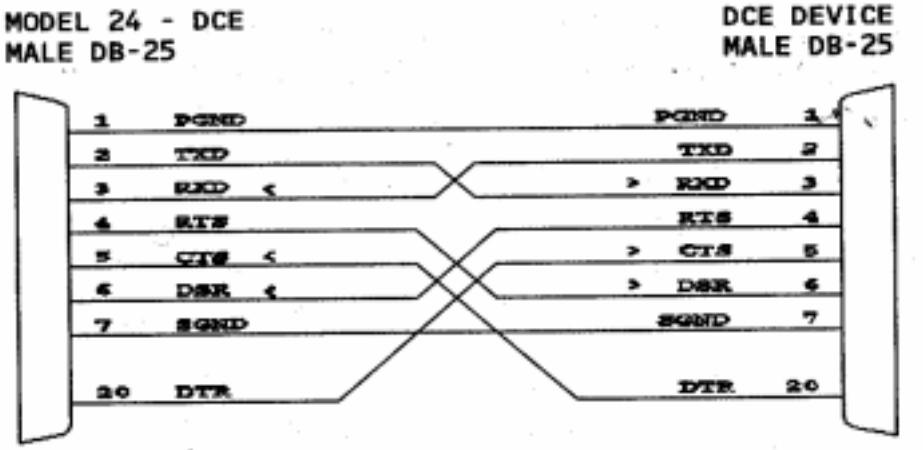


Figure 6-Model 24SII (DCE) to DCE Device

NOTE: Please refer to *Appendix A* for recommended cabling diagrams between the Model 24SII DES and various computers and printers.

5.4 I/O MODULES M24SII-V05 AND M24SII-V06A: EIA-232 SERIAL PORTS WITH RJ-45 MODULAR CONNECTORS

IMPORTANT: Before you proceed with cabling, you must know whether the devices to which you will connect the Model 24SII DES are DTE (Data Terminal Equipment) or DCE (Data Communication Equipment). The following devices are generally DTE: terminals, printers, computers like the IBM PC. The following devices are DCE: modems and some computers.

The M24SII-V05 and M24SII-V06A I/O modules have RJ-45 modular connectors. Most serial computers, modems, and printers do not have RJ-45 modular connectors. Therefore, adapters are required to convert from either DB-25 or DE-9 connectors to modular connectors. BayTech has a complete line of RJ-45 adapters and cables that will make your installation quick and trouble free. Please see *Appendix A.5* for adapter pin outs as well as recommended cabling.

The M24SII-V05 and M24SII-V06A I/O modules use the following signals for communication:

RJ-45 PIN-OUT INFORMATION			
PIN	SIGNAL EIA-232	DIRECTION	DESCRIPTION
1	DTR	Output	Handshake Out, enable/disable the receiving of characters
2	GND	----	Signal Ground
3	RTS	Output	Handshake Out, Normally +10V
4	TX	Output	Transmit Data
5	RX	Input	Receive Data
6	DSR	Input	Handshake In, not used
7	GND	----	Signal Ground
8	CTS	Input	Handshake In, enable/disable the transmission of characters

NOTE: Please confirm that you have the M24SII-V06A module. Check the top of the module for the part number. If you have an M24SII-V06 module (i.e., no A suffix), please call a BayTech Applications Engineer for the correct pin/signal definition and the correct adapter information.

Figure 7 and *Figure 8* are drawings of a RJ-45 receptacle and plug. The pin number assignments are given.

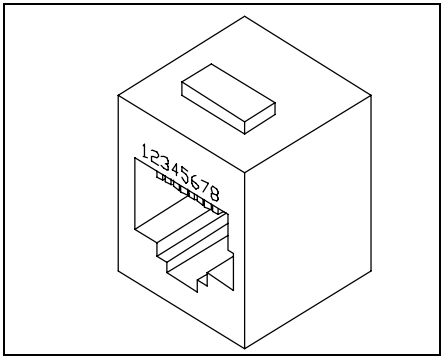


Figure 7: RJ-45 Receptacle

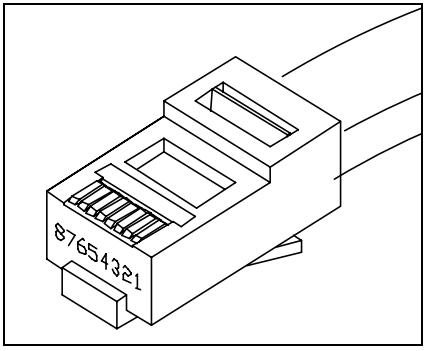


Figure 8: RJ-45 Plug

5.5 I/O MODULE M24SII-V07: EIA-232/EIA-422 SERIAL PORTS WITH RJ-45/RJ-11 MODULAR CONNECTORS

NOTE: Ports on the M24SII-V07 module may be individually configured to communicate with either EIA-232 or EIA-422 (default) protocol via jumper setting. In addition, you may program individual ports to use either 8-wire (RJ-45 - default) or 4-wire (RJ-11) cabling. The type of cabling required for ports on this module is determined by the Protocol, 4-Wire/8-Wire Operation, and Printer Sharing Mode (unidirectional or bidirectional) you are using. Please see *Appendix A.6* for instructions to configure the Protocol on individual ports and *Section 8.8.1* for instructions to program 4-Wire/8-Wire Operation and set Printer Sharing Mode.

IMPORTANT: Before you proceed with cabling your equipment to this module, you must verify that your equipment supports either EIA-232 or EIA-422 protocol. In addition, you must know the connector type and the pin/signal definitions for your equipment.

Ports on the M24SII-V07 module have RJ-45 (8-wire) connectors which also accept RJ-11 (4-wire) connectors. Most serial computers, modems, and printers do not have RJ-45/RJ-11 modular connectors. Therefore, adapters are required to convert from either DB-25 or DE-9 connectors to modular connectors. BayTech has a complete line of RJ-45/RJ-11 adapters and cables that will make your installation quick and trouble free. Please see *Appendix A.7* for adapter pinouts as well as recommended cabling. *Figure 7* and *Figure 8* on Page 34 are drawings of an RJ-45 receptacle and plug.

There are several possible pin/signal definitions depending upon how you have configured the 4-Wire/8-Wire Operation (8-wire or 4-wire), Printer Sharing Mode (unidirectional or bidirectional), and the Protocol (EIA-232 or EIA-422).

If you will be using 8-wire Operation, please see see *Section 5.5.1*.

If you will be using 4-wire Operation, please use the reference chart below to determine the applicable sections based on your application.

4-WIRE OPERATION OPTIONS					
Application	Printer Sharing Mode		Protocol		See Section:
	Bidirectional	Unidirectional	EIA-232	EIA-422	
1	X		X		5.5.2.1
2	X			X	5.5.2.2
3		X	X		5.5.2.3
4		X		X	5.5.2.4

5.5.1 8-WIRE OPERATION

NOTE: This configuration will support hardware or XON/XOFF handshaking and bidirectional Printer Sharing Mode.

Ports on the M24SII-V07 I/O module using 8-wire Operation utilize the following pins and signals for communication:

RJ-45 PIN-OUT INFORMATION			
PIN	SIGNAL 232/422	DIRECTION	DESCRIPTION
1	DTR/HSO	Output	Handshake Out, enable/disable the receiving of characters
2	GND/GND	----	Signal Ground
3	NC/TX+	Output	No connection/Transmit Data (+)
4	TX/TX-	Output	Transmit Data/Transmit Data (-)
5	RX/RX-	Input	Receive Data/Receive Data (+)
6	GND/RX+	----/Input	Signal Ground/Receive Data (+)
7	GND/GND	----	Signal Ground
8	CTS/HSI	Input	Handshake In, enable/disable the transmitting of characters

If you are connecting an EIA-232 device to the M24SII-V07 module using 8-wire Operation, please see *Appendix A.5* for device adapter pinouts and recommended cabling.

When connecting an EIA-422 device to the M24SII-V07 module using 8-wire Operation, the cable required to connect the two devices must have TX+ wired to RX+ (and vice versa), TX- wired to RX- (and vice versa), HSO wired to HSI (and vice versa), and have the signal grounds connected. Please *Figure 9*.

M24SII-V07 (EIA-422, 8-wire) RJ-45		Equipment Connections
1	HSO	HSI
2	GND	GND
3	TX+	RX+
4	TX-	RX-
5	RX-	TX-
6	RX+	TX+
7	GND	GND
8	HSI	HSO

Figure 9: M24SII-V07 EIA-422 (8-wire) Connection

If you are connecting an EIA-422 device other than another BayTech product, you must refer to the operator's manual for your equipment to determine which pins are defined as TX+, TX-, RX+, RX-, HSI, HSO, and signal ground (common).

If you are connecting another BayTech product (such as Tran-x) using EIA-422 protocol and 8-wire Operation, please refer to *Appendix A.7.1* for the recommended cable pinout.

5.5.2 4-WIRE OPERATION

5.5.2.1 EIA-232 PORTS USING BIDIRECTIONAL PRINTER SHARING MODE

NOTE: Ports using this configuration will support XON/XOFF handshaking only. You must enable XON/XOFF handshaking in configuration mode for these ports (see *Section 8.8.1*) and on the equipment that will connect to these ports.

Ports on the M24SII-V07 module using EIA-232 Protocol, 4-wire Operation, and bidirectional Printer Sharing Mode utilize the following pins and signals for communication:

RJ-11 PIN-OUT INFORMATION			
PIN	SIGNAL EIA-232	DIRECTION	DESCRIPTION
1	NC	----	No connection
2	TX	Output	Transmit Data
3	RX	Input	Receive Data
4	GND	----	Signal Ground

If you are connecting a device to a port on the M24SII-V07 module using EIA-232 Protocol, 4-wire Operation, and bidirectional Printer Sharing Mode, please see *Appendix A.7.2* for device adapter pinouts and recommended cabling.

5.5.2.2 EIA-232 PORTS USING UNIDIRECTIONAL PRINTER SHARING MODE

COMPUTER PORTS

NOTE: Computer ports using this configuration will support hardware handshaking only. You must ensure hardware handshaking is supported by the equipment that will connect to these ports.

Computer ports on the M24SII-V07 module using EIA-232 Protocol, 4-wire Operation, and unidirectional Printer Sharing Mode utilize the following pins and signals for communication:

RJ-11 PIN-OUT INFORMATION			
PIN	SIGNAL EIA-232	DIRECTION	DESCRIPTION
1	NC	----	No connection
2	DTR	Output	Handshake Out, enable/disable the receiving of characters
3	RX	Input	Receive Data
4	GND	----	Signal Ground

If you are connecting a device to a computer port on the M24SII-V07 module using EIA-232 Protocol, 4-wire Operation, and unidirectional Printer Sharing Mode, please see *Appendix A.7.3* for adapter pinouts and recommended cabling.

PRINTER PORTS

NOTE: Printer ports using this configuration will support hardware handshaking only. You must ensure hardware handshaking is supported by the equipment that will connect to these ports.

Printer ports on the M24SII-V07 module using EIA-232 Protocol, 4-wire Operation, and unidirectional Printer Sharing Mode utilize the following pins and signals for communication:

RJ-11 PIN-OUT INFORMATION			
PIN	SIGNAL EIA-232	DIRECTION	DESCRIPTION
1	NC	----	No connection
2	TX	Output	Transmit Data
3	CTS	Input	Handshake In, enable/disable the transmission of characters
4	GND	----	Signal Ground

If you are connecting a device to a printer port on the M24SII-V07 module using EIA-232 Protocol, 4-wire Operation, and unidirectional Printer Sharing Mode, please see *Appendix A.7.3* for adapter pinouts and recommended cabling.

5.5.2.3 EIA-422 PORTS USING BIDIRECTIONAL PRINTER SHARING MODE

NOTE: Ports using this configuration will support XON/XOFF handshaking only. You must enable XON/XOFF handshaking in configuration mode for these ports (see *Section 8.8.1*) and on the equipment that will connect to these ports.

Ports on the M24SII-V07 module using EIA-422 Protocol, 4-wire Operation, and bidirectional Printer Sharing Mode use the following pins and signals for communication:

RJ-11 PIN-OUT INFORMATION			
PIN	SIGNAL EIA-422	DIRECTION	DESCRIPTION
1	TX+	Output	Transmit Data (+)
2	TX-	Output	Transmit Data (-)
3	RX-	Input	Receive Data (-)
4	RX+	Input	Receive Data (+)

When connecting an EIA-422 device to the M24SII-V07 module using 4-wire Operation and bidirectional Printer Sharing Mode, the cable required to connect the two devices must have TX+ wired to RX+ (and vice versa) and TX- wired to RX- (and vice versa). Please see *Figure 10* below.

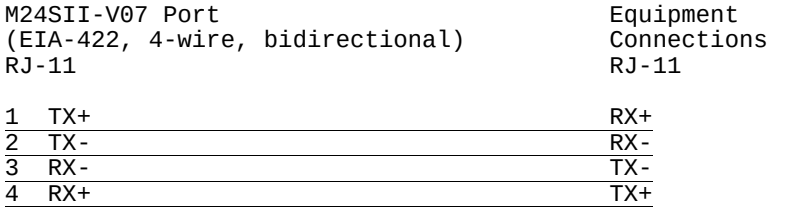


Figure 10: M24SII-V07 EIA-422 (4-wire) Connection

If you are connecting a device other than another BayTech product, you must refer to the operator's manual for your equipment to determine which pins are defined as TX+, TX-, RX+, and RX-.

If you are using 4-wire Operation and bidirectional Printer Sharing Mode and connecting to another BayTech product (such as Tran-x), please refer to *Appendix A.7.4* for the recommended cable pinout.

5.5.2.4 EIA-422 PORTS USING UNIDIRECTIONAL PRINTER SHARING MODE

COMPUTER PORTS

NOTE: Computer ports using this configuration will support hardware handshaking only. You must ensure hardware handshaking is supported by the equipment that will connect to these ports.

Computer ports on the M24SII-V07 module using EIA-422 Protocol, 4-wire Operation, and unidirectional Printer Sharing Mode utilize the following pins and signals for communication:

RJ-11 PIN-OUT INFORMATION			
PIN	SIGNAL EIA-422	DIRECTION	DESCRIPTION
1	HSO+	Output	Handshake Out (+)
2	HSO-	Output	Handshake Out (-)
3	RX-	Input	Receive Data (-)
4	RX+	Input	Receive Data (+)

When connecting an EIA-422 device to a computer port on the M24SII-V07 I/O module using 4-wire Operation and unidirectional Printer Sharing Mode, the cable required to connect the two devices must have RX+ wired to TX+, and RX- wired to TX-, HSO+ wired to HSI+, and HSO- wired to HSI-. Please see *Figure 11* below.

M24SII-V07 Computer Port (EIA-422, 4-wire, unidirectional) RJ-11		Equipment Connections RJ-11
1	HSO+	HSI+
2	HSO-	HSI-
3	RX-	TX-
4	RX+	TX+

Figure 11: M24SII-V07 EIA-422 (4-wire) Connection

If you are connecting a device other than another BayTech product, you must refer to the operator's manual for your equipment to determine which pins are defined as TX+, TX-, HSI+, and HSI-.

NOTE: If your EIA-422 device has only one input hardware handshake line (i.e., no HSI+ and HSI-), connect this single handshake line to HSO- on the M24SII-V07 module (Pin 5).

If you are connecting a computer port on the M24SII-V07 module to another BayTech product (such as the Tran-x LPT-460 or PS-02) using 4-wire Operation and unidirectional Printer Sharing Mode, please refer to *Appendix A.7.4* for the recommended cable pinout.

PRINTER PORTS

NOTE: Printer ports using this configuration will support hardware handshaking only. You must ensure hardware handshaking is supported by the equipment that will connect to these ports.

Printer ports on the M24SII-V07 module using EIA-422 Protocol, 4-wire Operation, and unidirectional Printer Sharing Mode utilize the following pins and signals for communication:

RJ-11 PIN-OUT INFORMATION			
PIN	SIGNAL EIA-422	DIRECTION	DESCRIPTION
1	TX+	Output	Transmit Data (+)
2	TX-	Output	Transmit Data (-)
3	HSI-	Input	Handshake In (-)
4	HSI+	Input	Handshake In (+)

When connecting an EIA-422 device to a printer port on the M24SII-V07 I/O module using 4-wire Operation and unidirectional Printer Sharing Mode, the cable required to connect the two devices must have TX+ wired to RX+, and TX- wired to RX-, HSI+ wired to HSO+, and HSI- wired to HSO-. Please see *Figure 12* below.

```
M24SII-V07 Printer Port                    Equipment
(EIA-422, 4-wire, unidirectional)          Connections
RJ-11                                      RJ-11

1  TX+                                     RX+
2  TX-                                     RX-
3  HSI-                                    HSO-
4  HSI+                                    HSO+
```

Figure 12: M24SII-V07 EIA-422 (4-wire) Connection

If you are connecting a device other than another BayTech product, you must refer to the operator's manual for your equipment to determine which pins are defined as RX+, RX-, HSO+, and HSO-.

NOTE: If your EIA-422 device has only one output hardware handshake line (i.e., no HSO+ and HSO-), connect this single handshake line to HSI- on the M24SII-V07 module (Pin 5).

If you are connecting a printer port on the M24SII-V07 module to another BayTech product (such as the Tran-x SP-01 or SP-02) using 4-wire Operation and unidirectional Printer Sharing Mode, please refer to *Appendix A.7.4* for the recommended cable pinout.

6 USER-PROGRAMMABLE FEATURES

6.1 PORT LOGICAL NAME

The Port Logical Name is simply an aid to identifying which device is connected to which port. It is used in the configuration menus and the I.D. Page Message. It has no function other than identification.

Factory default is Device A for Port 1, Device B for Port2..... Device X for Port 24.

6.2 PORT DESIGNATION

The Model 24SII DES may have a total number of ports ranging from 4 to 24, in multiples of 4. Any of these ports (parallel or serial) except Port 1 of Module 1 may be configured to have a Port Designation of computer or printer. Port 1 of Module 1 must be a computer port. Therefore, the Port Designation for this port cannot be changed. The Model 24SII DES will automatically convert data from serial-to-parallel and parallel-to-serial.

NOTE: The Port Designation does not allow you to change ports from parallel to serial or vice versa. The communication protocol of the ports (parallel or serial) is determined by the type(s) of modules you have installed.

NOTE: If computer-to-computer communication is required, the designated ports for these computers must be serial ports. If a port is to be used for a plotter, it should be designated as a printer port. If a port is to be used for a modem, it should be designated as a computer port.

Factory default configuration is Port 1 of Module 1 (serial) a computer port, Port 2 of Module 1 (serial) a printer port, and all remaining ports (serial and/or parallel) computer ports.

6.3 NUMBER OF PRINTERS (M24SII-V02 HIGH SPEED PARALLEL MODULE ONLY)

You may configure the number of printer ports on the M24SII-V02 parallel module to be 0 to 4. If you will be connecting any printers to this module, the printers would physically connect to the higher numbered ports. For example, if you will be connecting 2 parallel printers to a M24SII-V02 high speed parallel module, you would attach the printers to Port 3 and Port 4 of that module.

Factory default configuration for Number of Printers is 0.

6.4 PORT SELECT CODE

To select a specific port in multiple printer applications or when computer-to-computer communications is desired, the computer sends the Port Select Code (which consists of any ASCII character string up to eight characters), the desired module number (1 to 6), the desired port number (1 to 4), and a terminating character: 0D Hex (Enter/Return) or 0A Hex (Line Feed). We will refer to this entire string of characters as the *port select sequence*.

For example, if you are using the factory default Port Select Code ($SELECT) and you wish to select a printer connected to Port 2 of Module 4, you would need to send the following port select sequence: $SELECT42<Enter/Return> or $SELECT42<Line Feed>.

The port select sequence is trapped by the Model 24SII DES if valid and not passed to the selected peripheral or computer.

The port select sequence may be sent as a separate ASCII file preceding the print job, via DOS batch file(s), as part of a printer initialization string, or by using the RAMEXEC hot key software.

If the computer is communicating with 7 bit word size with parity enabled, the 8th or parity bit is masked from the Port Select Code before it is examined, allowing you to send the Port Select Code with odd or even parity.

Factory default is $SELECT.

6.5 PORT SELECT MODE

In multiple printer applications, you may select printer ports either anytime while printing or before the print job only. Mode A is a general-purpose mode and allows the computer to select a printer anytime while printing by sending a new port select sequence. Mode B allows the computer to select the printer at the beginning of printing only. In Mode B, the Model 24SII DES will recognize any port select sequence in the first 16 characters of the print job only. After the first 16 characters of the print job have been received, the Input Inactivity Timeout period must elapse before the Model 24SII DES will recognize another port select sequence.

Computer-to-computer communication is not affected by the Port Select Mode.

Factory default is Mode A: printer selection anytime while printing.

6.6 SERIAL PORT CONFIGURATION

The Model 24SII DES will translate for serial devices using different configurations. This allows you to mix-and-match devices having different configurations. You may set the baud rate, word size, stop bits, parity and XON/XOFF (transmit and receive) for each individual serial port. For high speed serial modules, you may also program the printer sharing mode to either bidirectional or unidirectional. You may program the 4-Wire/8-Wire Operation on the M24SII-V07 high speed serial module to be 4-wire (RJ-11) or 8-wire (RJ-45).

Factory-default configuration on all serial ports is 9600 baud rate, 8 bit word size, 1 stop bit, no parity, and XON/XOFF disabled. The default printer sharing mode for high speed serial modules is bidirectional. The default 4-Wire/8-Wire Operation for the M24SII-V07 module is 8-wire.

6.7 INPUT INACTIVITY TIMEOUT

The Input Inactivity Timeout allows the Model 24SII DES to disconnect a computer port which has sent a print job when no characters are received from the computer for the specified timeout period. The input inactivity timeout is effective only for computer-to-peripheral communication. For computer-to-computer communication, the timeout does not apply, and disconnect occurs only manually.

If the buffer of the Model 24SII DES is filled to capacity, the unit will drop the DTR line or send an XOFF to the computer, causing the computer to stop sending characters until the buffer can accept more data. In this case, the time that the computer is not sending characters is not counted as part of the Input Inactivity Timeout.

Factory default is 20 seconds.

6.8 FORM FEED

The Model 24SII DES has four Form Feed Modes allowing you to determine when form feed occurs at the printers you are selecting: at the beginning of printing, at the end of printing, or both. This feature is useful when sending DOS files to a laser printer.

Factory default is no form feed.

6.9 I.D. PAGE MESSAGE

You can print a programmable message and the Logical Name of the source computer on a separate sheet of paper before or after printing any other data. You can enable or disable the I.D. Page Message and whether you want it to print before or after the print job. This page prints in addition to the form feed. The I.D. Page Message is useful for identifying various users' print jobs in the event you have several people printing to the same printer frequently, such as in a classroom environment.

Factory default is: "This print job is for:", with the I.D. message disabled.

6.10 DEFAULT PRINTER ASSIGNMENT

Individual computer ports may be configured to have print jobs sent to a specific default printer port automatically. The Default Printer Assignment consists of the module number (1 to 6) and the port number (1 to 4) that the printer is physically connected to on the Model 24SII DES. The Default Printer Assignment may be set to 0 for contention mode in which case all print jobs sent from the particular computer will be sent to the first available printer.

Any print job sent without a port select sequence preceding it will automatically go to the default printer port upon initial power-up.

Factory default is 0 for contention mode.

7 OPERATION

7.1 COMPUTER-TO-PERIPHERAL OPERATION

The Model 24SII Data Exchange System allows peripheral (printer, plotter) sharing, specific peripheral selection or peripheral contention, and buffering of print data. The Model 24SII DES will let several users automatically share one printer. In multiple printer applications, it will let users contend for the next available printer on a first-come-first-served basis or select a specific printer. Data is stored in the buffer of the Model 24SII DES and is sent to the printer as the printer can receive it.

From the factory, the Model 24SII DES is preset to allow multiple computers to share one printer. If this configuration does not correspond to your application, you should make the necessary changes to the Port Designations by accessing the configuration mode of the Model 24SII DES (see *Section 8*). For a description of the various changes that may be made by accessing the configuration mode please see *Section 6*.

It is highly recommended that printers or plotters connected to the Model 24SII DES be plugged in and turned on at all times while there is activity occurring on the Model 24SII DES; however printers need not be in the "on line" mode at all times.

7.1.1 SHARING A SINGLE PERIPHERAL

In applications where several users are sharing one peripheral (printer, plotter, etc.), printer sharing is automatic. The user performs his normal print operation; there are no codes to send. Data is automatically sent to the printer. The Model 24SII DES can receive print jobs simultaneously from all computers and will pass print jobs to the printer in the same order in which they were received in the buffer.

7.1.2 CONTENDING FOR MULTIPLE PERIPHERALS

In multiple printer applications, the Model 24SII DES gives you the capability of sending print jobs to the first available printer (contention mode). You may put the Model 24SII DES into contention mode by changing the Default Printer Assignment to 0-0 for the individual computer port(s) while in configuration mode (see *Sections 6.10 and 8.14*). The data is sent to the Model 24SII's buffer and passed to the next available printer on a first-come-first-serve basis.

If your computer is connected to a port configured to default to a specific printer upon power-up (i.e., non-zero Default Printer Assignment), you may have the Model 24SII DES send a print job to the first available printer by sending the Port Select Code (default is $SELECT) followed by 00 and a terminating character (Enter/Return or Line Feed) prior to sending the print job. Subsequent print jobs will be routed to the first available printer until either another port select sequence is sent, power is cycled on the Model 24SII DES, or you enter the configuration mode.

The Port Select Code, 00 (zero-zero) and terminating character are trapped if they are valid and not passed to the printer.

A computer connected to a port configured for contention mode upon power-up (i.e., Default Printer Assignment of 0-0) may select a specific printer by sending the Port Select Code followed by desired module number (1 to 6), the desired printer port number (1 to 4), and a terminating character. Subsequent print jobs will go to the selected printer until either another port select sequence is sent, power is cycled on the Model 24SII DES, or you enter the configuration mode.

The port select sequence may be sent by manually inserting it into an ASCII print file, via DOS batch file, as part of a printer initialization string, or by using BayTech's RAMEXEC program will send it for you when you strike designated hot keys.

The Model 24SII DES powers-up from the factory in contention mode.

7.1.3 SPECIFIED SHARING OF MULTIPLE PERIPHERALS

To select a specific peripheral in multiple printer/plotter applications, the computer sends a port select sequence which consists of the user-defined Port Select Code (factory default is: $SELECT), the module number the printer is connected to (1 to 6), followed by the desired printer port number on that module (1 to 4) and a terminating character: 0D Hex (Enter/Return) or 0A Hex (Line Feed). The port select sequence is trapped if valid and not passed to the printer.

For example, if you wish to select a printer which is connected to Port 2 of Module 2, you would send the following port select sequence:

$SELECT22<Enter/Return>** or **$SELECT22<Line Feed>.

All print jobs sent after you have selected a specific peripheral port will be routed to that peripheral port until another peripheral port is selected.

There are two modes for sending the Port Select Code. In **Port Select Mode A** (printer selection anytime while printing), the Model 24SII DES looks for the Port Select Code anytime. If no Port Select Code is received, the data will be routed to the last selected peripheral port or to the default peripheral port (if the unit has just been powered up).

In **Port Select Mode B** (printer selection at beginning of printing), the Model 24SII DES looks for the Port Select Code in the first 16 characters received. If the first characters of the Port Select Code are not received within 16 characters, the data will be routed to the default printer port. If the first characters of the Port Select Code are received within 16 characters and a valid port select sequence is subsequently received, the data will be routed to the selected printer port.

The port select sequence may be sent as a separate ASCII file preceding the print job, via DOS batch files, as part of a printer initialization string, or by using the utility software.

7.1.4 BEGINNING AND ENDING A PRINT JOB

A print job starts when the Model 24SII DES receives 3 or more characters from a computer.

In **Port Select Mode A** (printer selection anytime), a print job is ended when no characters are received by the Model 24SII DES from the computer for the specified input inactivity timeout period or when the computer sends a manual disconnect sequence.

In Port Select Mode A, when the Input Inactivity Timeout is set to 0 (zero) seconds, a print job is ended only under the following conditions:

1) Manual Disconnect: Port Select Code followed by a terminating character (Enter/Return or Line Feed).

2) Clear Buffer Command: Port Select Code followed by CLR and a terminating character (see *Section 7.1.6*).

3) Sending another Port Select Sequence: Port Select Code followed by a module number, a port number, and a terminating character. This will also start the next print job.

In **Port Select Mode B** (printer selection at beginning of printing), a print job is ended only when no characters are received by the Model 24SII DES from the computer for the specified Input Inactivity Timeout period only.

CAUTION: The Input Inactivity Timeout should not be set to 0 (zero) seconds (disabled) in Port Select Mode B. Mode B operation cannot recognize a manual disconnect or clear buffer command until the current print job is ended via the inactivity timeout period.

If the buffer of the Model 24SII DES is filled to capacity, the unit will drop the DTR line or send an XOFF to the computer, causing the computer to stop sending characters until the buffer can accept more data. In this case, the time that the computer is not sending characters is not counted as part of the Input Inactivity Timeout.

7.1.5 BUFFERING OF PRINT DATA

When a user makes a request to print, the data is sent to the Model 24SII DES and stored in the spooling buffer (standard 1MB, optional up to 16MB). All users may simultaneously input data to this dynamically allocated buffer. Therefore, the entire buffer could be occupied by data from one user, if only one is active, or the buffer could be simultaneously distributed to all users, maximizing buffer utilization.

Print jobs are buffered and put into a queue in the same order in which they were sent to the Model 24SII DES. These print jobs are then sent to the printer in the same order in which they were queued.

When a computer port LED illuminates, this indicates a connection between the computer on that port and the buffer of the Model 24SII DES. When a printer port LED illuminates, this indicates the buffer of the Model 24SII DES has connected to the printer on that port.

7.1.6 BUFFER CLEARING

If a computer wishes to clear the buffer, the computer sends the Port Select Code followed by *CLR* and a terminating character (Enter/Return or Line Feed) to the Model 24SII DES.

This command will only affect print jobs originated by that particular computer. Print jobs in the buffer from other computers are not affected. The clear buffer command will clear print jobs currently queued in the buffer and also a print job in process, if one is printing.

NOTE: This command will not clear a printer's buffer of data already passed to it from the Model 24SII DES.

The clear buffer command is operable in both Port Select Mode A or Mode B. However, in Port Select Mode B, the Model 24SII DES is transparent after the first 16 characters are received, therefore the computer must wait for the Input Inactivity Timeout to occur before sending the clear buffer command.

The clear buffer command may be sent as a separate ASCII file preceding the print job, via DOS batch files, as part of a printer initialization string, or by using the utility software.

7.1.7 MINIMUM SIZE PRINT JOB

Each print job must be a minimum of three (3) characters. The Input Inactivity Timeout interval is not valid until after three characters are received by the Model 24SII DES.

If less than three characters are received within the inactivity timeout interval (default is 20 seconds) after the first character(s) is received, the character(s) will be discarded.

7.2 COMPUTER-TO-COMPUTER OPERATIONS

The Model 24SII Data Exchange System allows pairs of computers (or computers and other devices such as modems, scales, data collection equipment, etc.) to communicate while other computers are sending data to the print buffer and the Model 24SII DES is sending data to printers. Full duplex communication allows file transfer with many popular communications software packages.

NOTE: Computer-to-computer communication can occur only if both ports communicating are serial. Parallel ports allow one-way communication only and will not provide full duplex communication. Computers that will be operating with computer-to-computer communication must both be connected to ports designated as serial ports. For high speed serial modules, the printer sharing mode must be bidirectional.

7.2.1 INITIATING A COMPUTER-TO-COMPUTER CONNECTION

If two serial computers wish to communicate, either computer sends to the Model 24SII DES the Port Select Code followed by the other computer's module number and port number, and a terminating character: 0D Hex (Enter/Return) or 0A Hex (Line Feed).

If the requested computer is free, the two computers are connected with full duplex communication, and an *On Line* message is sent by the Model 24SII DES to the computer requesting the connection.

If the requested computer is busy, the computer requesting connection receives a *Busy* message from the Model 24SII DES.

To disconnect, either connected computer first delays two seconds and then sends the Port Select Code followed by a terminating character: 0D Hex (Enter/Return) or 0A Hex (Line Feed). You must wait another two seconds after sending the disconnect sequence, before sending any other data such as a print job or Port Select Code.

Do not send both Enter/Return and Line Feed as the terminating character. The Model 24SII DES looks for either Enter/Return or Line Feed as the terminating character, but not both. If you send both Enter/Return and Line Feed as part of the disconnect sequence, the Model 24SII DES will not recognize the disconnect sequence unless there is a two second delay between Enter/Return and Line Feed.

If there is not a two second delay prior to sending the disconnect sequence and a two second delay after sending the disconnect sequence, the entire disconnect sequence will become invalid and will be passed through to the other computer device. The timing between characters in the Port Select Code should not exceed one second, otherwise the Port Select Code will become invalid and the characters will be passed through to the device connected to the other computer port.

The Model 24SII DES will respond to a valid disconnect sequence by sending an *Off Line* message to the user requesting the disconnect.

7.2.2 FILE TRANSFER

File transfer can be achieved with a computer-to-computer connection through the Model 24SII DES as long as the communicating computers are each running a third-party communications software package. Note that both computers must be serial.

Following is a partial list of software packages that support file transfer: CrossTalk, PC Talk XVI, and Mirror.

Note that to effectively achieve file transfer, both computers should be using the same protocol, e.g., Kermit, Q-Modem, or X-Modem.

The port select sequence should be sent from within your communications package by using a macro or manually typing it out so you can see the *On Line* or *Busy* message.

NOTE: Using RAMEXEC to select another computer port is not suggested. This is because RAMEXEC does not provide full duplex communication so you cannot see the *On Line* or *Busy* message if you attempt to use RAMEXEC to determine whether or not you got connection to the other computer port.

7.2.3 MODEM SHARING

Modem sharing can be achieved with a computer-to-computer connection through the Model 24SII DES.

Make the connection to the modem port by sending the Port Select Code, the module number (1 to 6) and port number (1 to 4) the modem is connected to followed by a Enter/Return or line feed character. The model 24 will respond with an *On Line* message if the modem is available or a *Busy* message if the modem is currently connected to another computer port. Proceed with your normal modem communications once you receive the *On Line* message from the Model 24SII DES.

It is suggested that the computer make the connection to the modem port on the Model 24SII DES from within your desired modem package. You must be in a full duplex mode within your modem package. You must also configure your modem package to communicate with the same serial port parameters that your computer normally uses to print with (i.e., baud rate, etc.).

A common mistake is to configure your communications package to match your modem's serial parameters (baud rate, word size, etc.) and not the Model 24SII's serial parameters. Keep in mind that you are physically connected to the Model 24SII DES, not the modem. The Model 24SII DES will do any necessary serial parameter conversions between the computer and the modem.

For example, suppose you want to communicate with a 2400 baud modem connected to Port 2 of Module 2 and your PC is connected to a computer port set at the Model 24SII's factory default serial configuration (9600 baud, 8 data bit, 1 stop bit, no parity, and XON/XOFF disabled). Port 2 of module 2 would need to be configured to communicate at 2400 baud to match the baud rate of the modem. However, you would configure your modem communications package to communicate at 9600 baud to match the baud rate of the computer port on the Model 24SII DES you are connected to. You are now ready to make the connection to the modem port through the Model 24SII DES.

NOTE: The Model 24SII DES does not pass hardware flow control lines through the unit. If your modem package requires a change of state in either the Data Carrier Detect or Ring Indicator signal lines, it is suggested that you use the results codes option on both the modem and your modem package when communicating through the Model 24SII DES. Please refer to your technical documentation on both your modem and your modem package on how to enable and use the results codes.

NOTE: Your external modem should be programmed to have the autobaud detect feature disabled. This is done by issuing the AT\J0 command for Hayes compatible modems.

Once you have finished your modem session, you must send the disconnect sequence (i.e., the Port Select Code followed by Enter/Return or Line Feed) to disconnect from the modem port and allow other users access to the modem port.

7.3 DATA FLOW CONTROL

7.3.1 HARDWARE HANDSHAKING

BETWEEN COMPUTER AND PERIPHERAL THROUGH MODEL 24SII

When a computer transmits data to a peripheral device through a computer port on the Model 24SII DES, the data is received and stored in the spooling buffer (standard 1MB; optional up to 16MB) which in turn retransmits it to a peripheral device through a printer port. During transmission, when the buffer fills, the Model 24SII DES will make the computer port's DTR (Data Terminal Ready) line low (negative voltage), signaling the transmitting computer that it cannot accept more data.

When the Model 24SII DES retransmits the data to the peripheral device through a printer port, and the peripheral device cannot receive any more data, the Model 24SII DES will expect to see a low on the CTS (Clear-to-Send) line. When the peripheral device can receive more data, the Model 24SII DES will expect to see a high on the CTS line.

When the buffer of the Model 24SII DES can receive more data, the Model 24SII DES will make the transmitting computer port's DTR line high (positive voltage).

In the reverse direction (peripheral-to-Model 24SII DES-to computer), handshaking is the same, but the spooling buffer is not utilized.

BETWEEN COMPUTER AND COMPUTER THROUGH MODEL 24SII

When Computer A transmits data to Computer B through the Model 24SII DES, the data is received from Computer A and stored in a 512-character buffer which in turn retransmits it to Computer B. When the buffer fills, the Model 24SII DES will make the DTR line low to Computer A, signaling Computer A that it cannot accept more data.

When the Model 24SII DES retransmits the data to Computer B, the Model 24SII DES will expect to see a high on the CTS line. When Computer B cannot receive any more data, the Model 24SII DES will expect to see a low on the CTS line.

When the buffer of the Model 24SII DES can receive more data, the Model 24SII DES will make the DTR line high to Computer A.

7.3.2 XON/XOFF HANDSHAKING

NOTE: The Model 24SII DES permits XON/XOFF to be enabled or disabled by port independently in the receive and transmit directions. The description of handshaking functions below considers XON/XOFF to be enabled in both directions. If XON/XOFF is disabled in one direction, that direction will support hardware handshaking as described in *Section 7.3.1*.

BETWEEN COMPUTER AND PERIPHERAL THROUGH MODEL 24SII

When a computer transmits data to a peripheral device through a computer port on the Model 24SII DES, the data is received and stored in the spooling buffer (standard 1MB; optional up to 16MB) which in turn retransmits it to a peripheral device through a printer port. During transmission, when the buffer fills, the Model 24SII DES will send an XOFF, signaling the transmitting computer that it cannot accept more data.

When the Model 24SII DES retransmits the data to the peripheral device through a printer port, and the peripheral device cannot receive any more data, the Model 24SII DES will expect to see a low on the CTS (Clear-to-Send) line or receive an XOFF. When the peripheral device can receive more data, the Model 24SII DES will expect to see a high on the CTS line or receive an XON.

When the buffer of the Model 24SII DES can receive more data, the Model 24SII DES will send an XON to the transmitting computer.

In the reverse direction (Peripheral-to-Model 24SII DES-to Computer), handshaking is the same, but the spooling buffer is not utilized.

BETWEEN COMPUTER AND COMPUTER THROUGH MODEL 24SII

When Computer A transmits data to Computer B through the Model 24SII DES, the data is received from Computer A and stored in a 512-character buffer which in turn retransmits it to Computer B. When the buffer fills, the Model 24SII DES will send an XOFF to Computer A, signaling Computer A that it cannot accept more data.

When the Model 24SII DES retransmits the data to Computer B, the Model 24SII DES will expect to see a high on the CTS line or receive an XON. When Computer B cannot receive any more data, the Model 24SII DES will expect to see a low on the CTS line or receive an XOFF.

When the buffer of the Model 24SII DES can receive more data, the Model 24SII DES will send an XON to Computer A.

NOTE: For computers sending binary data and using XON/XOFF handshaking, the input flow control (Recv) should be enabled and the output flow control (Xmit) should be disabled. This will allow any XON or XOFF character sent in the binary string to be passed through the Model 24SII DES to the receiving device.

7.4 APPLICATION NOTE

You may wish to write your own program for sending the port select sequence to the Model 24SII DES instead of manually inserting it or utilizing the hot keys provided in BayTech's supplied support software program.

A simple procedure when using word processing programs is to create an ASCII file for each printer which contains the Port Select Code, the device module number (1 to 6), the device port number, and the terminating character. This file could be named PRINTER1. When you wish to select a particular device, you simply print this file followed by the actual print file.

Another method is to make the port select sequence the first characters of the text. These characters will be trapped by the Model 24SII DES and will not be sent to the printer. This method will work only if the text of the print file is sent in an ASCII format.

You may also use a DOS batch file to send a port select sequence. The DOS command typically used is the ECHO command. An example of the ECHO command used to select a printer connected to Port 2 of Module 2 using the default Port Select Code is as follows:

ECHO $PRINTER22>LPT1:.

This command should be entered in all capitals with only one space between ECHO and the $. Please refer to you DOS manual for instructions on creating DOS batch files.

Programs such as Word Perfect and WordStar typically send a printer initialization string before any data. The port select sequence may also be embedded in this string to select a printer. For example, Word Perfect allows you to edit the printer definition file for a specific printer by using the PTR command. The port select sequence for the Model 24SII DES would typically be inserted prior to any escape codes for the printer. Please see the documentation for your application package(s) for more information on editing printer initialization strings.

7.5 HP 3000 OPTION

If you have a HP 3000 mini computer, you should contact a BayTech sales representative to order option #26. When the HP 3000 sends an HP LaserJet inquiry command, the Model 24SII DES will then respond with the required ASCII 0 (30 hex).

This option is compatible with all other computer systems.

8 CONFIGURATION

Configuration changes for the entire Model 24SII DES are made through the master configuration port which is Port 1 of Module 1. Port 1 of Module 1 must always be a serial port to allow configuration to occur. The master configuration port has access to the configuration of all ports on the Model 24SII DES and can program all options of the configuration mode one module at a time.

A serial computer connected to a port other than Port 1 of Module 1 may access configuration mode and configure ports on its module only. However, configuration changes are limited; several options - Port Designation, Port Select Code, I.D. Page Message, and I.D. Page Printing Schedule - may be made only through the master configuration port.

Before the master configuration port can access the configuration mode, all ports on the Model 24SII DES must be inactive (i.e. all red LEDs must be off) and there can be no print jobs in the buffer. Once the master configuration port has accessed the configuration mode, the LEDs for Port 1 of Module 1 and the LEDs for the selected module will illuminate and will remain illuminated while configuration is occurring. All devices connected to the selected module for configuration will be unable to communicate with the Model 24SII DES while configuration of that module is occurring.

Before a computer not connected to the master configuration port can access configuration mode, the LEDs for its module must be out (i.e., no activity on the module) and there can be no print jobs in the buffer for any port on that module. Once the computer has accessed configuration mode for its module, the LEDs for that module will illuminate. All devices connected to the module will be unable to communicate with the Model 24SII DES while configuration for the module is occurring.

NOTE: Parallel computer ports may not be used for configuration, as communication is only one-way.

To access the configuration mode of the Model 24SII DES, use the following procedure:

1. Connect a dumb terminal (or a PC running a terminal emulation program) to the master configuration port (Port 1 of Module 1) or to any serial computer port. Configure your terminal's serial parameters to match those of the Model 24SII DES. From the factory, all serial ports on the Model 24SII DES are factory set at 9600 baud rate, 8 word size, 1 stop bit, no parity, and XON/XOFF disabled.

   If you do not have a dumb terminal or a terminal emulation program, BayTech supplies a utility diskette which includes software to put an IBM PC or compatible into a terminal mode. See *Section 4.2* for instructions to obtain the software (TERM.EXE) and *Section 4.6* for instructions to use TERM for configuration.

2. Send from this device to the Model 24SII DES port being used for configuration the following control characters: ASCII **Control-T** (14 Hex), ASCII capital **C** (43 Hex), and the desired module number (**1** to **6**).

   For example, if your terminal is connected to Port 1 of Module 1 and you wish to configure a port on Module 1, you would send the following: **<Control-T>C1**.

NOTE: A serial computer connected to a port other than Port 1 of Module 1 cannot access configuration mode for its module while the master configuration port is configuring a module.

NOTE: If a computer attempts to configure a feature that is only accessible to the master configuration port, Port 1 of Module 1, the computer will be sent this message by the Model 24SII DES:

```
This Option is accessible via Port 1, Module 1 ONLY.
Strike any Key to continue
```

NOTE: If a computer port other than the master configuration port attempts to access configuration mode of a module that it is not connected to, the Model 24SII DES will ignore the configuration request and create a print job consisting of *Control-T*, C, and the module number.

CAUTION: If you have a M24SII-V07 installed as Module 1, do not configure Port 1 of this module for any baud rate higher than 115,200 or you will locked out of configuration mode and unable to program the various features of the Model 24SII.

8.1 MAIN CONFIGURATION MENU

OPTION ACCESSIBILITY: Through any serial computer port.

The Model 24SII DES will respond to the receiving of *Control-T*, capital **C**, and the desired module number with an identification block and a menu of the configuration options available, similar to the following:

```
Copyright (c) Bay Technical Associates, 1992
Model 24SII Data Exchange System  Rev. 2.02
Total memory   1M
This Module is 1
Status.....1
Program Port Logical Name.....2
Set Port Designation.....3
Program Port Select Code.....4
Set Port Select Mode.....5
Set Serial Port Configuration.....6
Set Input Inactivity Timeout.....7
Enable/Disable Form Feed Mode.....8
Program I.D. Page Message.....9
Enable/Disable I.D. Page Message.....A
Select Print Schedule for I.D. Page.....B
Program Default Printer Assignment.....C
Program Module Printer Sharing Mode.....D
Exit Configuration.....X
```

For illustration purposes, we will show the configuration menus for Module 1 which are typical of the configuration menus generated by other modules.

NOTE: Menu selection is case sensitive. It is recommended that your keyboard be in the CAPS LOCK position.

NOTE: If you have configured a module and exited from configuration mode for that module, you must wait for the Model 24SII DES to reset before attempting to access configuration mode for another module. It takes the Model 24SII DES 5 to 10 seconds to reset after exiting configuration mode for a module. The LEDs on the front panel will illuminate while the Model 24SII DES is resetting. Wait for the LEDs to go out before attempting to configure another module.

NOTE: If you happen to be configuring a M24SII-V02 high speed parallel module, the main configuration menu is different from the one shown on the previous page.

The Model 24SII DES will respond to the receiving of *Control-T*, capital **C**, and the M24SII-V02 module number with the following menu:

```
Copyright (c) Bay Technical Associates, 1992
Model 24SII Data Exchange System  Rev. 2.02
Total memory   1M
This Module is 1
Status.....1
Program Port Logical Name.....2
Set Number of Printers.....3
Program Port Select Code.....4
Set Port Select Mode.....5
Set Input Inactivity Timeout.....6
Enable/Disable Form Feed Mode.....7
Program I.D. Page Message.....8
Enable/Disable I.D. Page Message.....9
Select Print Schedule for I.D. Page.....A
Program Default Printer Assignment.....B
Exit Configuration.....X
```

We will make special notes at the beginning of certain configuration subsections if that subsection does not apply to the M24SII-V02 high speed parallel module or if that subsection pertains exclusively to this module.

8.2 STATUS

OPTION ACCESSIBILITY: Through any serial computer port.

By responding to the Enter Request: message at the end of the main configuration menu (see *Section 8.1*) with "1" (Status), you may review the status of the current configuration of the Model 24SII DES.

The Model 24SII DES will respond with:

```
Enter Request :1

-------------------------------------------------
| Port | Logical Name   |  Port  |   Port   |Prnt|
|      |                |  Type  |  Desig   |Assn|
-------------------------------------------------
|   1  |Device A        | Serial | Computer |  0 |
|   2  |Device B        | Serial | Printer  |1-2 |
|   3  |Device C        | Serial | Computer |  0 |
|   4  |Device D        | Serial | Computer |  0 |
-------------------------------------------------

Strike any Key to Continue, or X to Exit

-----------------------------------------
| Port | Logical Name   | Form feed | I.D.|
|      |   (Computer)   |Begin| End | Page|
-----------------------------------------
|   1  |Device A        | Off | Off | Off |
|   3  |Device C        | Off | Off | Off |
|   4  |Device D        | Off | Off | Off |
-----------------------------------------

Strike any Key to Continue, or X to Exit

-----------------------------------------
| Port | Logical Name   |Timeout|  Port  |
|      |   (Computer)   |in sec |Sel Mode|
-----------------------------------------
|   1  |Device A        |    20 |Anytime |
|   3  |Device C        |    20 |Anytime |
|   4  |Device D        |    20 |Anytime |
-----------------------------------------

Strike any Key to Continue, or X to Exit
```

```
---------------------------------
| Port | Logical Name   |I.D. Page|
|      |   (Printer)    |Schedule |
---------------------------------
|   2  |Device B        | Before  |
---------------------------------

Strike any Key to Continue, or X to Exit

-------------------------------------------------
| Port |  Baud | Word | Stop |Parity|  Xon / Xoff |
|      |  Rate | Size | Bits |      | Xmit | Recv |
-------------------------------------------------
|   1  |   9600|  8   |   1  |None  |  Off | Off  |
|   2  |   9600|  8   |   1  |None  |  Off | Off  |
|   3  |   9600|  8   |   1  |None  |  Off | Off  |
|   4  |   9600|  8   |   1  |None  |  Off | Off  |
-------------------------------------------------

Strike any Key to Continue, or X to Exit

Port Select Code is  :$SELECT

I.D. Page Message is  :
This Job is from

Strike any Key to Continue, or X to Exit

Copyright (c) Bay Technical Associates, 1992
Model 24SII Data Exchange System  Rev. 2.02
Total memory   1M
This Module is 1
Status.....................................1
Program Port Logical Name..................2
Set Port Designation.......................3
Program Port Select Code...................4
Set Port Select Mode.......................5
Set Serial Port Configuration..............6
Set Input Inactivity Timeout...............7
Enable/Disable Form Feed Mode..............8
Program I.D. Page Message..................9
Enable/Disable I.D. Page Message...........A
Select Print Schedule for I.D. Page........B
Program Default Printer Assignment........C
Exit Configuration........................X

Enter Request :
```

You may now make whatever changes are necessary by responding to the above menu. The Exit function will return you to the Operations Mode.

8.3 PROGRAM PORT LOGICAL NAME

OPTION ACCESSIBILITY: Through any serial computer port.

By responding to the Enter Request: message at the end of the main configuration menu (see *Section 8.1*) with "2" (Program Port Logical Name), you may enter a logical or identifying name for each device connected to the selected module. These Logical Names appear in the configuration menus and also in the I.D. Page Message if it is enabled.

The Model 24SII DES will respond with:

```
Enter Request :2
-------------------------------------------------
| Port | Logical Name   |  Port  |   Port   |Prnt|
|      |                |  Type  |  Desig   |Assn|
-------------------------------------------------
|   1  |Device A        | Serial | Computer |  0 |
|   2  |Device B        | Serial | Printer  |1-2 |
|   3  |Device C        | Serial | Computer |  0 |
|   4  |Device D        | Serial | Computer |  0 |
-------------------------------------------------

Enter  Port Number (ENTER=Exit) :
```

You should now enter the port number of the device for which you wish to program a new Logical Name and then strike the Enter key. For example, if you entered "1" and Enter for Port 1, the Model 24SII DES will respond with:

```
-------------------------------------------------
| Port | Logical Name   |  Port  |   Port   |Prnt|
|      |                |  Type  |  Desig   |Assn|
-------------------------------------------------
|   1  |Device A        | Serial | Computer |  0 |
-------------------------------------------------
Enter  Logical Name (Max. 8  Characters) :
```

You may now enter the new Logical Name for the device connected to this port. A maximum of 8 characters may be entered. If less than 8 characters are entered, the entry must be followed by striking the Enter key.

For example, if you entered MAIN IBM, the Model 24SII DES will respond with an updated menu and a prompt to continue or exit:

```
-------------------------------------------------
| Port | Logical Name   |  Port  |   Port   |Prnt|
|      |                |  Type  |  Desig   |Assn|
-------------------------------------------------
|   1  |MAIN IBM        | Serial | Computer |  0 |
|   2  |Device B        | Serial | Printer  |1-2 |
|   3  |Device C        | Serial | Computer |  0 |
|   4  |Device D        | Serial | Computer |  0 |
-------------------------------------------------

Enter  Port Number (ENTER=Exit) :
```

You may now program a new Logical Name for another port, if desired, by entering that port number or exit by striking the Enter key.

The Model 24SII DES will save the new Logical Name(s) permanently in non-volatile memory and will subsequently power-up with the new name(s) in effect.

The Model 24SII DES will now return to the main configuration menu (see *Section 8.1*).

8.4 SET PORT DESIGNATION

NOTE: This section does not pertain to the M24SII-V02 high speed parallel module.

OPTION ACCESSIBILITY: Through Port 1 of Module 1 only.

By responding to the Enter Request: message at the end of the main configuration menu (see *Section 8.1*) with "3" (Set Port Designation), you may designate any port on the selected module as a computer port or a printer port.

Plotters should be connected to ports designated as printer ports. Modems should be connected to ports designated as computer ports. A minimum of one port per Model 24SII DES unit must always be designated as a computer port. If Module 1 is occupied by an M24SII-V03, M24SII-V04, M24SII-V06A, M24SII-V07, or M24SII-V08 high speed serial module, Port 1 of Module 1 cannot be configured to be a printer port.

The Model 24SII DES will respond with:

```
Enter Request :3

-------------------------------------------------
| Port | Logical Name   |  Port  |   Port   |Prnt|
|      |                |  Type  |  Desig   |Assn|
-------------------------------------------------
|   1  |Device A        | Serial | Computer |  0 |
|   2  |Device B        | Serial | Printer  |1-2 |
|   3  |Device C        | Serial | Computer |  0 |
|   4  |Device D        | Serial | Computer |  0 |
-------------------------------------------------

Enter  Port Number (ENTER=Exit) :
```

Enter the number of the port that you wish to designate a computer port or a printer port and then strike the Enter key. For example, if you entered "4" and Enter for Port 4, the Model 24SII DES will respond with:

```
Port Is Assigned as a ( Computer) Port
Enter P or C to Change, Enter When Done :
```

You may now designate the port by entering "P" for printer port or "C" for computer port. Enter may be sent for no change. For example, if you entered "P", the Model 24SII DES will respond with:

```
Port is designated as a ( Printer ) Port
```

```
Enter P for Printer, C for Computer, ENTER for no change :
```

When you strike the Enter key for no change, the Model 24SII DES will respond with a reconfigured status menu, similar to:

```
-------------------------------------------------
| Port | Logical Name   |  Port  |   Port   |Prnt|
|      |                |  Type  |  Desig   |Assn|
-------------------------------------------------
|   1  |Device A        | Serial | Computer |  0 |
|   2  |Device B        | Serial | Printer  |1-2 |
|   3  |Device C        | Serial | Computer |  0 |
|   4  |Device D        | Serial | Printer  |1-4 |
-------------------------------------------------

Enter  Port Number (ENTER=Exit) :
```

You may now designate another port or exit by striking the Enter key.

The Model 24SII DES will save the new Port Designations permanently in non-volatile memory and will subsequently power-up with the new Port Designations in effect.

The Model 24SII DES will now return to the main configuration menu (see *Section 8.1*) and display the following message:

```
Change your devices to match new configuration
```

This reminds you to connect the proper device to a newly configured computer or printer port. Computers and modems connect to computer ports. Printers and plotters connect to printer ports.

8.5 SET NUMBER OF PRINTERS (M24SII-V02 HIGH SPEED PARALLEL MODULE)

NOTE: This section pertains only to the M24SII-V02 high speed parallel module.

OPTION ACCESSIBILITY: Through Port 1 of Module 1 only.

By responding to the Enter Request: message at the end of the main configuration menu for the M24SII-V02 high speed parallel module (see *Section 8.1*) with "3" (Set Number of Printers), you may set the Number of Printers you wish to have on the selected high speed parallel module.

The Model 24SII DES will respond with:

```
Number of Printers is.....................0
Enter Number of Printers (1 to 4).........:
```

Enter the desired Number of Printers.

NOTE: The higher numbered ports on the M24SII-V02 high speed parallel module are reserved as printer ports. For example, if you wish to define 2 printers on this module, enter "2" in response to the prompt above. Physically connect the printers to Port 3 and Port 4 of this module number.

The Model 24SII DES will return to the main configuration menu for the M24SII-V02 high speed parallel module (see *Section 8.1*) and display the following message:

```
Change your devices to match new configuration
```

This reminds you to connect the proper device to a newly configured computer or printer port. Computers and modems connect to computer ports. Printers and plotters connect to printer ports.

8.6 PROGRAM PORT SELECT CODE

OPTION ACCESSIBILITY: Through Port 1 of Module 1 only.

By responding to the Enter Request: message at the end of the main configuration menu (see *Section 8.1*) with "4" (Program Port Select Code), you may change the Port Select Code to a user-defined code. This Port Select Code consists of any ASCII character string (1 to 8 characters).

The Model 24SII DES will respond with the following:

```
Enter Request :4

Port Select Code is:  $SELECT
Enter Port Select Code (Max. 8 characters)
or ENTER for no change :
```

Enter the new Port Select Code. If less than 8 characters are entered, you must follow entry by striking the Enter key.

NOTE: Non-printable characters are acceptable, but they will not appear in the Status menu.

For example, if you entered #PORT, the Model 24SII DES will respond with:

```
Port Select Code is: #PORT
Enter Port Select Code (Max. 8 characters)
or ENTER for no change :
```

If no additional change is desired, strike the Enter key to exit.

The Model 24SII DES will save the new Port Select Code permanently in non-volatile memory and will subsequently power-up with that code in effect.

The Model 24SII DES will now return to the main configuration menu (see *Section 8.1*).

8.7 SET PORT SELECT MODE

OPTION ACCESSIBILITY: Through any serial computer port.

By responding to the Enter Request: message at the end of the main configuration mode (see *Section 8.1*) with "5" (Set Port Select Mode), you may change the method of selecting ports.

The Model 24SII DES will respond with:

```
Enter Request :5

-----------------------------------------
| Port | Logical Name   |Timeout|  Port   |
|      |   (Computer)   |in sec |Sel Mode|
-----------------------------------------
|   1  |Device A        |    20 |Anytime |
|   3  |Device C        |    20 |Anytime |
|   4  |Device D        |    20 |Anytime |
-----------------------------------------
```

Enter Port Number (ENTER=Exit) :Enter the number of the port on which the Port Select Mode is to be changed and then strike the Enter key. For example, if you entered "3" and Enter for Port 3, the Model 24SII DES will respond with:

```
Port Select Mode is ( Anytime ) while printing
Enter A for Anytime, B for Beginning, ENTER for no change :
```

Enter the Port Select Mode that you wish. For example, if you entered "B" for Beginning, the Model 24SII DES will respond with:

```
Port Select Mode is ( Beginning ) of printing only
Enter A for Anytime, B for Beginning, ENTER for no change :
```

If no other change is required, strike the Enter key for no change, and the Model 24SII DES will respond with an updated menu and a prompt to continue or exit:

```
-----------------------------------------
| Port | Logical Name   |Timeout|  Port  |
|      |   (Computer)   |in sec |Sel Mode|
-----------------------------------------
|   1  |Device A        |    20 |Anytime |
|   3  |Device C        |    20 |Begin   |
|   4  |Device D        |    20 |Anytime |
-----------------------------------------

Enter  Port Number (ENTER=Exit) :
```

You may now proceed to set the Port Select Mode for another port, or exit by striking the Enter key. The Model 24SII DES will save the new Port Select Mode permanently in non-volatile memory and will subsequently power-up with the new Port Select Mode in effect.

The Model 24SII DES will now return to the main configuration menu (see *Section 8.1*).

8.8 SET SERIAL PORT CONFIGURATION

NOTE: This section does not pertain to the M24SII-V02 high speed parallel module since there are no serial ports on this module.

OPTION ACCESSIBILITY: Through any serial computer port.

By responding to the Enter Request: message at the end of the main configuration menu (see *Section 8.1*) with "6" (Set Serial Port Configuration), you may change the serial configuration of each serial port on the selected module, i.e. baud rate, word size, stop bits, parity, and XON/XOFF handshaking (Transmit and Receive). High speed serial modules also allow you to program the Printer Sharing Mode. The M24SII-V07 high speed serial module will allow you to program the 4-Wire/8-Wire Operation.

Each port is configured individually. This allows the user to mix-and-match devices of different configurations without the need to reconfigure the devices. It also allows the Model 24SII DES to translate for devices using different configurations.

CAUTION: If you have a M24SII-V07 installed as Module 1, do not configure Port 1 of this module for any baud rate higher than 115,200 or you will locked out of configuration mode and unable to program the various features of the Model 24SII.

The Model 24SII DES will respond with:

```
Enter Request :6
Bidirectional
-------------------------------------------------
| Port |  Baud | Word | Stop |Parity|  Xon / Xoff |
|      |  Rate | Size | Bits |      | Xmit | Recv |
-------------------------------------------------
|   1  |   9600|  8   |   1  |None  |  Off | Off  |
|   2  |   9600|  8   |   1  |None  |  Off | Off  |
|   3  |   9600|  8   |   1  |None  |  Off | Off  |
|   4  |   9600|  8   |   1  |None  |  Off | Off  |
-------------------------------------------------

Enter  Port Number (ENTER=Exit) :
```

You should enter the number of the port that you wish to reconfigure, and then strike the Enter key. For example, if you sent "2" and Enter, the Model 24SII DES will respond with the current status of Port 2 and a menu of the available options:

```
Bidirectional
-------------------------------------------------
| Port |  Baud | Word | Stop |Parity|  Xon / Xoff |
|      |  Rate | Size | Bits |      | Xmit | Recv |
-------------------------------------------------
|   2  |   9600|  8   |   1  |None  |  Off | Off  |
-------------------------------------------------
Exit/Save......1  Set Stop Bits.....4
Set Baud Rate..2  Set Parity........5
Set Word Size..3  Set XON/XOFF......6

Enter Request :
```

You may now reconfigure Port 2 by selecting the appropriate option (1-6) from the menu.

NOTE: The M24SII-V07 module will also show *Set 4-Wire/8-Wire* as item number *7*.

/The following baud rates are supported for the two different printer sharing modes:

Bidirectional: 300, 600, 1200, 2400, 4800, 9600, 19200, 38400, and 115.2k
Unidirectional: 9600, 115.2k, 230.4k, and 460.8k.

For example, to change the baud rate to 115.2K baud, send character "2" (Set baud rate). The Model 24SII DES will respond with this menu (when using bidirectional printer sharing mode):

```
1 for   300
2 for   600
3 for  1200
4 for  2400
5 for  4800
6 for  9600
7 for 19200
8 for 38400
9 for 115.2K
Enter Request :
```

Send "9" for 115.2K baud rate, and the Model 24SII DES will respond with the reconfigured status of the port, the option menu, and the prompt:

```
-------------------------------------------------
| Port |  Baud | Word | Stop |Parity|  Xon / Xoff |
|      |  Rate | Size | Bits |      | Xmit | Recv |
-------------------------------------------------
|   2  | 115.2K|  8   |   1  |None  |  Off | Off  |
-------------------------------------------------
Exit/Save......1  Set Stop Bits.....4
Set Baud Rate..2  Set Parity........5
Set Word Size..3  Set XON/XOFF......6

Enter Request :
```

You may now select other options from the menu to reconfigure Port 2. For example, to set XON/XOFF, send character "6" (Set XON/XOFF) in response to the prompt.

NOTE: XON/XOFF flow control may be enabled in both the transmit and receive directions for bidirectional printer sharing mode. XON/XOFF may be enabled in the receive direction only for unidirectional printer sharing mode.

The Model 24SII DES will respond with:

```
Stop/Restart Output upon Receiving of XON/XOFF ? (Y/N):
XON/XOFF Sent Based on buffer Full/Empty Condition ? (Y/N):
```

The first question addresses XON/XOFF flow control in the transmit data direction. The second question addresses XON/XOFF flow control in the receive data direction. You should then enter "Y" to enable XON/XOFF or "N" to disable XON/XOFF in the respective directions. For example, if you entered "N" in response to the transmit direction and "Y" in response to the receive direction, the Model 24SII DES will respond with:

```
Bidirectional
-------------------------------------------------
| Port |  Baud | Word | Stop |Parity|  Xon / Xoff |
|      |  Rate | Size | Bits |      | Xmit | Recv |
-------------------------------------------------
|   2  |  38400|  8   |   1  |None  |  Off | On   |
-------------------------------------------------
Exit/Save......1  Set Stop Bits.....4
Set Baud Rate..2  Set Parity........5
Set Word Size..3  Set XON/XOFF......6

Enter Request :
```

If there are no other changes for this port, send "1" (Exit/Save), and the Model 24SII DES will respond with:

```
Bidirectional
-------------------------------------------------
| Port |  Baud | Word | Stop |Parity|  Xon / Xoff |
|      |  Rate | Size | Bits |      | Xmit | Recv |
-------------------------------------------------
|   1  |   9600|  8   |   1  |None  |  Off | Off  |
|   2  |  38400|  8   |   1  |None  |  Off | On   |
|   3  |   9600|  8   |   1  |None  |  Off | Off  |
|   4  |   9600|  8   |   1  |None  |  Off | Off  |
-------------------------------------------------

Enter  Port Number (ENTER=Exit) :
```

You may now reconfigure another port, or exit by striking the Enter key. The Model 24SII DES will now return to the main configuration menu with a message at the end as follows:

```
Copyright (c) Bay Technical Associates, 1990
Model 24SII Data Exchange System  Rev. 2.02
Total memory   1M
This Module is 1
Status.....................................1
Program Port Logical Name..................2
Set Port Designation.......................3
Program Port Select Code...................4
Set Port Select Mode.......................5
Set Serial Port Configuration..............6
Set Input Inactivity Timeout...............7
Enable/Disable Form Feed Mode..............8
Program I.D. Page Message..................9
Enable/Disable I.D. Page Message...........A
Select Print Schedule for I.D. Page........B
Program Default Printer Assignment.........C
Exit Configuration.........................X

Change you devices to match new configuration
```

This message reminds you to change the serial configuration of the devices connected to the reconfigured ports to match the new configuration of the Model 24SII DES.

The new configuration will become effective after you have exited configuration mode for the appropriate module and the Model 24SII DES has reset.

The Model 24SII DES will now return to the main configuration menu (see *Section 8.1*).

8.9 SET INPUT INACTIVITY TIMEOUT

OPTION ACCESSIBILITY: Through any serial computer port.

By responding to the Enter Request: message at the end of the main configuration menu (see *Section 8.1*) with "7" for any serial module or "6" for the M24SII-V02 high speed parallel module (Set Input Inactivity Timeout), you may set the disconnect timeout. The Model 24SII DES will automatically disconnect the computer and printer if no characters are received from the computer for the specified timeout period.

The Model 24SII DES will respond with:

```
Enter Request :7

-----------------------------------------
| Port | Logical Name   |Timeout|  Port  |
|      |   (Computer)   |in sec |Sel Mode|
-----------------------------------------
|   1  |Device A        |    20 |Anytime |
|   3  |Device C        |    20 |Anytime |
|   4  |Device D        |    20 |Anytime |
-----------------------------------------

Enter  Port Number (ENTER=Exit) :
```

Enter the number of the computer port for which you wish to set the Input Inactivity Timeout and then strike the Enter key. For example, if you entered "3" and Enter, the Model 24SII DES will respond with:

```
-----------------------------------------
| Port | Logical Name   |Timeout|  Port  |
|      |   (Computer)   |in sec |Sel Mode|
-----------------------------------------
|   3  |Device C        |    20 |Anytime  |
-----------------------------------------

Input Inactivity Timeout is  20 Seconds
Enter NeIw Value (0 to 200), or ENTER for no change :
```

Enter the number of timeout seconds that you wish from 0 to 200, followed by Enter.

If 0 (zero) is entered, the Input Inactivity Timeout will be disabled, and the end of a print job will occur only when the computer sends the Port Select Code followed by a printer port number.

*** * * CAUTION! * * ***

Do not set the Input Inactivity Timeout to zero seconds when Port Select Mode B has been selected. Mode B recognizes the end of a print job only by the Input Inactivity Timeout. It does not recognize the manual disconnect where the computer sends the Port Select Code and a port number.

For example, if you entered "100" for 100 seconds, the Model 24SII DES will respond with:

```
Input Inactivity Timeout is 100 Seconds
Enter New Value (0 to 200), or ENTER for no change :
```

If no other change is required, strike the Enter key. The Model 24SII DES will respond with the reconfigured status and the prompt. You may now set the timeout for another computer port, or exit by striking the Enter key. The Model 24SII DES will save the new Input Inactivity Timeout(s) permanently in non-volatile memory and will subsequently power-up with the new timeout period(s) in effect.

The Model 24SII DES will now return to the main configuration menu (see *Section 8.1*).

8.10 ENABLE/DISABLE FORM FEED MODE

OPTION ACCESSIBILITY: Through any serial computer port.

By responding to the Enter Request: message at the end of the main configuration menu (see *Section 8.1*) with "8" for any serial module or "7" for the M24SII-V02 high speed parallel module (Enable/Disable Form Feed Mode), you may enable form feed and select when form feed occurs, or disable form feed.

The Model 24SII DES will respond with:

```
Enter Request :8

-----------------------------------------
| Port | Logical Name   | Form feed | I.D.|
|      |   (Computer)   |Begin| End | Page|
-----------------------------------------
|   1  |Device A        | Off | Off | Off |
|   3  |Device C        | Off | Off | Off |
|   4  |Device D        | Off | Off | Off |
-----------------------------------------

Enter  Port Number (ENTER=Exit) :
```

Enter the number of the port for which you wish to set the Form Feed Mode and then strike the Enter key. For example, if you entered "3" for Port 3 and Enter, the Model 24SII DES will respond with:

```
Form Feed at the Beginning of Printing is (OFF)
Enter 1 for ON, 2 for OFF, ENTER  for no change :
```

You should then enter "1" if you wish to enable form feed at the beginning of printing, "2" if you wish to disable form feed at the beginning of printing, or strike the Enter key if no change from the present condition is required. For example, if you entered "1", the Model 24SII DES will respond with:

```
Form Feed at the Beginning of Printing is (ON)
Enter 1 for ON, 2 for OFF, ENTER  for no change :
```

If no additional change is required, strike the Enter key for no change, and the Model 24SII DES will respond with:

```
Form Feed at the End of Printing is ( Off )
Enter 1 for ON, 2 for OFF , ENTER for no change :
```

You should follow the same procedure as above to enable or disable form feed at the end of printing. For example, if you strike the Enter key for no change, the Model 24SII DES will respond with:

```
-----------------------------------------
| Port | Logical Name   | Form feed | I.D.|
|      |   (Computer)   |Begin| End | Page|
-----------------------------------------
|   1  |Device A        | Off | Off | Off |
|   3  |Device C        | On  | Off | Off |
|   4  |Device D        | Off | Off | Off |
-----------------------------------------

Enter  Port Number (ENTER=Exit) :
```

You may now set the Form Feed Mode for another port, or exit by striking the Enter key. The Model 24SII DES will save the new form feed settings permanently in non-volatile memory.

The Model 24SII DES will now return to the main configuration menu (see *Section 8.1*).

8.11 PROGRAM I.D. PAGE MESSAGE

OPTION ACCESSIBILITY: Through Port 1 of Module 1 only.

By responding to the Enter request: message at the end of the main configuration menu (*see Section 8.1*) with "9" for any serial module or "8" for the M24SII-V02 high speed parallel module (Program I.D. Page Message), you may program the content of this identifying message.

The Model 24SII DES will respond with:

```
Enter Request :9

I.D. Page Message is :
This Print Job is from :
Enter C to change, or ENTER for no change :
```

If you desire to make a change, enter "C". The Model 24SII DES will respond with:

```
Enter I.D Page Message (Max. 40 characters)
Control-C to terminate or no change :
```

Enter the new message, followed by Control-C. Note that the message will print on paper exactly as it is placed on the CRT screen. The message may appear on one line or several lines. If several lines are desired, each line must be ended by Enter and Line Feed (^J).

For example, if you entered THIS IS THE NEW MESSAGE, the Model 24SII DES will respond with:

```
I.D. Page Message is :THIS IS THE NEW MESSAGE
Enter C to change, or ENTER for no change :
```

If no change in the message is desired, strike the Enter key, and the current message will be retained. The Model 24SII DES will save the new I.D. Page Message permanently in non-volatile memory and will subsequently power-up with that message in effect.

The Model 24SII DES will now return to the main configuration menu (see *Section 8.1*).

8.12 ENABLE/DISABLE I.D. PAGE MESSAGE

OPTION ACCESSIBILITY: Through any serial computer port.

By responding to the Enter Request: message at the end of the main configuration menu (*see Section 8.1*) with **capital** "A" for any serial module or "9" for the M24SII-V02 high speed parallel module (Enable/Disable I.D. Page Message), you may enable or disable the I.D. Page Message to print by individual port.

The Model 24SII DES will respond with:

```
Enter Request :A

-----------------------------------------
| Port | Logical Name   | Form feed | I.D.|
|      |   (Computer)   |Begin| End | Page|
-----------------------------------------
|   1  |Device A        | Off | Off | Off |
|   3  |Device C        | Off | Off | Off |
|   4  |Device D        | Off | Off | Off |
-----------------------------------------

Enter  Port Number (ENTER=Exit) :
```

Enter the number of the computer port for which you wish to enable or disable the I.D. Page Message and then strike the Enter key. For example, if you entered "3" and Enter for Port 3, the Model 24SII DES will respond with:

```
I.D. Page Message Switch is ( Off )
Enter 1 for ON, 2 for OFF , ENTER for no change :
```

You should enter "1" to enable the I.D. Page Message to print, "2" to disable the I.D. Page Message, or strike the Enter key if no change in the present condition is required. For example, if you entered "1" to enable the I.D. Page Message, the Model 24SII DES will respond with:

```
I.D. Page Message Switch is ( On )
Enter 1 for ON, 2 for OFF , ENTER for no change :
```

If no further change is required for Port 1, strike the Enter key, and the Model 24SII DES will respond with:

```
-----------------------------------------
| Port | Logical Name   | Form feed | I.D.|
|      |   (Computer)   |Begin| End | Page|
-----------------------------------------
|   1  |Device A        | Off | Off | Off |
|   3  |Device C        | Off | Off | On  |
|   4  |Device D        | Off | Off | Off |
-----------------------------------------

Enter  Port Number (ENTER=Exit) :
```

You may now enter another port number, or exit by striking the Enter key. The Model 24SII DES will save the enabling or disabling of the I.D. Page Message permanently in non-volatile memory and will subsequently power-up with the new setting in effect.

The Model 24SII DES will now return to the main configuration menu (see *Section 8.1*).

8.13 SELECT PRINT SCHEDULE FOR I.D. PAGE

OPTION ACCESSIBILITY: Through Port 1 of Module 1 only.

By responding to the Enter Request: message at the end of the main configuration menu (see *Section 8.1*) with **capital** "B" for any serial module or **capital** "A" for the M24SII-V02 high speed parallel module (Select Print Schedule for I.D. Page), you may schedule the I.D. Page Message to print before or after a print job. This scheduling is done at the printer port.

For example, if you have Port 3 and Port 4 designated as printer ports, the Model 24SII DES will respond with:

```
Enter Request :B

-----------------------------------
| Port | Logical Name   |I.D. Page|
|      |   (Printer)    |Schedule |
-----------------------------------
|   3  |Device A        | Before  |
|   4  |Device B        | Before  |
-----------------------------------

Enter  Port Number (ENTER=Exit) :
```

Enter the number of the printer port for which you wish to change the I.D. Page Message print schedule and then strike the Enter key. For example, if you entered "3" and Enter for Port 3, the Model 24SII DES will respond with:

```
I.D. Page is to be Print ( BEFORE ) the Print Job
Enter A for After, B for Before, ENTER for no change :
```

Enter "A" if you wish the I.D. Page Message to print after the print job, or "B" if you wish the I.D. Page Message to print before the print job. You can also strike the Enter key for no change. For example, if you entered "A", the Model 24SII DES will respond with:

```
I.D. Page is to be Print ( AFTER ) the Print Job
Enter A for After, B for Before, ENTER for no change :
```

If no further change is required for Port 2, strike the Enter key. The Model 24SII DES will respond with the reconfigured status and the prompt:

```
---------------------------------
| Port | Logical Name   |I.D. Page|
|      |   (Printer)    |Schedule |
---------------------------------
|   3  |Device A        | After   |
|   4  |Device B        | Before  |
---------------------------------

Enter  Port Number (ENTER=Exit) :
```

You may now reconfigure another printer port, or exit by striking the Enter key. The Model 24SII DES will save the new I.D. Page Message print schedule permanently in non-volatile memory and subsequently power-up with the new schedule in effect.

The Model 24SII DES will now return to the main configuration menu (see *Section 8.1*).

8.14 PROGRAM DEFAULT PRINTER ASSIGNMENT

OPTION ACCESSIBILITY: Through any serial computer port.

By responding to the Enter Request: message at the end of the main configuration menu (see *Section 8.1*) with **capital** "C" for any serial module or **capital** "B" for the M24SII-V02 high speed parallel module (Program Default Printer Assignment), you may configure Default Printer Assignment for each individual computer port. The Default Printer Assignment consists of the module number and port number the desired printer is connected to. After initial power-up, if a particular computer sends a print job without a port select sequence, the print job will automatically be routed to the default printer module/port.

NOTE: The Default Printer Assignment for printer ports will be the module number and port number the printer is connected to on the Model 24SII DES.

The Model 24SII DES will respond with:

```
Enter Request :C

-------------------------------------------------
| Port | Logical Name   |  Port  |   Port   |Prnt|
|      |                |  Type  |  Desig   |Assn|
-------------------------------------------------
|   1  |Device A        | Serial | Computer |  0 |
|   2  |Device B        | Serial | Printer  |1-2 |
|   3  |Device C        | Serial | Computer |  0 |
|   4  |Device D        | Serial | Computer |  0 |
-------------------------------------------------

Enter  Port Number (ENTER=Exit) :
```

Enter the number of the computer port for which you wish to change the Default Printer Assignment. For example, if you enter "3" for Port 3, the Model 24SII DES will respond with:

```
Default Module is   0
Enter New Value (0 to 6), or ENTER for no change :
```

Enter the module number of the desired printer. For example, if the desired printer is connected to Module 6, enter "6" in response to the prompt.

The Model 24SII DES will respond with:

```
Default Port is   2
Enter New Value (1 to 4), or ENTER for no change :
```

Enter the port number of Module 6 that the desired printer is connected to. For example, if the desired printer is connected to Port 1 of Module 6, enter "1" in response to the prompt. The Model 24SII DES will respond with:

```
-------------------------------------------------
| Port | Logical Name   |  Port  |   Port   |Prnt|
|      |                |  Type  |  Desig   |Assn|
-------------------------------------------------
|   1  |Device A        | Serial | Computer |  0 |
|   2  |Device B        | Serial | Printer  |1-2 |
|   3  |Device C        | Serial | Computer |6-1 |
|   4  |Device D        | Serial | Computer |  0 |
-------------------------------------------------

Enter  Port Number (ENTER=Exit) :
```

You may now reconfigure another computer port, or exit by striking the Enter key. The Model 24SII DES will save the new Default Printer Assignment(s) permanently in non-volatile memory and subsequently power-up with the new assignment(s) in effect.

The Model 24SII DES will now return to the main configuration menu (see *Section 8.1*).

8.15 PROGRAM MODULE PRINTER SHARING MODE

OPTION ACCESSIBILITY: Through Port 1 of Module 1 only.

By responding to the Enter Request: message at the end of the main configuration menu (see *Section 8.1*) with **capital** "D" for any serial module (Program Module Printer Sharing Mode), you may configure the Printer Sharing Mode for desired module. Bidirectional printer sharing mode is used if your application involves transferring files between computers and/or modem sharing. The maximum baud rate allowed for a module using bidirectional printer sharing mode is 115,200 bps. Unidirectional printer sharing mode is used if your application involves printer/plotter sharing only. The maximum baud rate allowed for a module using unidirectional printer sharing mode is 460,000 bps.

The Model 24SII will respond with:

```
Printer Sharing Mode is (Bidirectional)

Unidirectional and Bidirectional will be set for all four ports.
Changing from on to the other will default all ports to 9600 baud

Enter 1 for Unidirectional, 2 for Bidirectional, or ENTER for no change:
```

Enter the number corresponding to your desired Printer Sharing Mode.

IMPORTANT: Whenever you change the printer sharing mode for any high speed serial module, the baud rate for <u>all</u> four ports will be set to 9600 bps.

8.16 EXIT

To exit the configuration mode, send **capital** X in response to the prompt at the end of the main configuration menu, and the Model 24SII DES will return to the operating mode.

9 MAINTENANCE

Since there are no adjustments and no moving parts in the Model 24SII DES, preventative maintenance is unnecessary.

If you find it necessary to return the Model 24SII DES to the factory for warranty work or factory-set changes, follow the procedure listed under *Section 10* for repacking.

Before you ship your unit, please call BayTech to get a Return Authorization number. BayTech cannot accept warranty or no-charge returns without this number.

Ship your unit to the address listed in *Section 11*, - Technical Support.

10 REPACKING FOR SHIPPING

If you need to repack your unit for shipping, please choose a heavy cardboard box for packing. Surround your unit with sufficient insulation (a minimum of 2-inches) to withstand the rigors of transport. Be sure to seal the box securely with strapping or packing tape. Masking tape or cellophane tape is not recommended.

If you are returning your unit for warranty work or repair, please call BayTech to get a Return Authorization number. Please put the Return Authorization number on the outside of the cardboard box. BayTech cannot accept no-charge returns without this number.

11 TECHNICAL SUPPORT

In the event that you have problems with the Model 24SII DES, BayTech has a staff of applications engineers on duty to assist you from 7 am to 6 pm (CST or CDT), Monday through Friday.

When you call BayTech Tech Support, please have the following information available to help the applications engineers answer your questions more accurately and more quickly:

1. Identify which modules you are using and have the serial number (located on the back of the unit) handy.

2. Identify what computers, printers or other peripherals you have connected to Model 24SII DES.

3. Identify any special equipment you are using (for example, in-line spoolers, networks, software drivers, etc.).

4. Identify what cables you are using, what the lengths of the cables are, and who sold you the cables.

5. Identify any special options you may have ordered with your Model 24SII DES.

6. Identify the software packages you are using.

7. If possible, have a print-out of the Model 24SII's configuration status ready when you call.

Always call BayTech before dismantling your equipment or before returning the Model 24SII DES to BayTech for repair.

Bay Technical Associates, Inc.
P.O. Box 387, 200 N. Second Street
Bay Saint Louis, Mississippi 39520-1000 U.S.A.
Phone: 228-467-8231 or 800-523-2702
Fax: 228-467-4551
Web Site: baytechdcd.com

FEDERAL COMMUNICATIONS COMMISSION RADIO FREQUENCY INTERFACE STATEMENT*

This equipment generates and uses radio frequency energy and, if not installed and used properly (that is, in strict accordance with the manufacturer's instructions) may cause interference to radio and television reception. The equipment has been type tested and found to comply within the limits for a Class A computing device in accordance with the specifications in Subpart J of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference to radio or television reception will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures.

1. Reorient the receiving antenna.
2. Relocate the computer equipment with respect to the receiver.
3. Move the computer away from the receiver.
4. Plug the computer into a different outlet so that computer and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions.

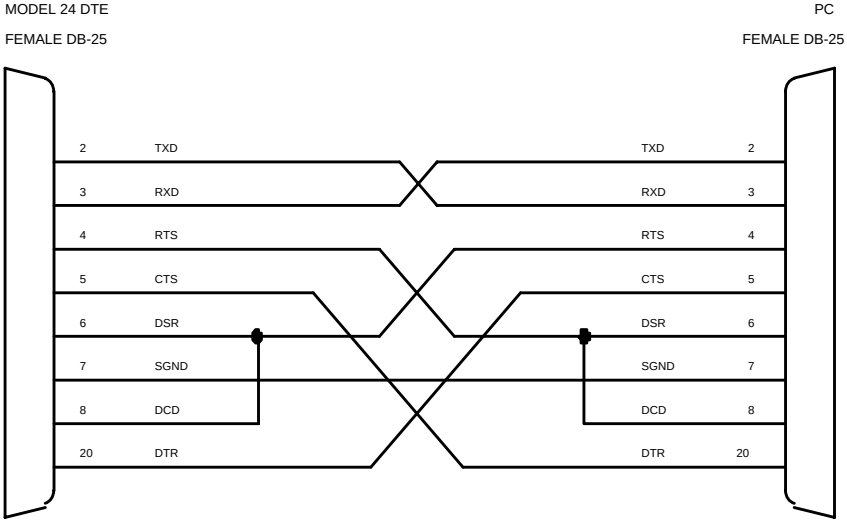
The Federal Communications Commission has prepared a booklet entitled "How to Identify and Resolve Radio - TV Interference Problems" which may be helpful to you. This booklet (stock #004-000-00345-4) may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

**Use of a shielded interface cable is required to comply within the Class A limits in Subpart J of Part 15 of FCC rules.*

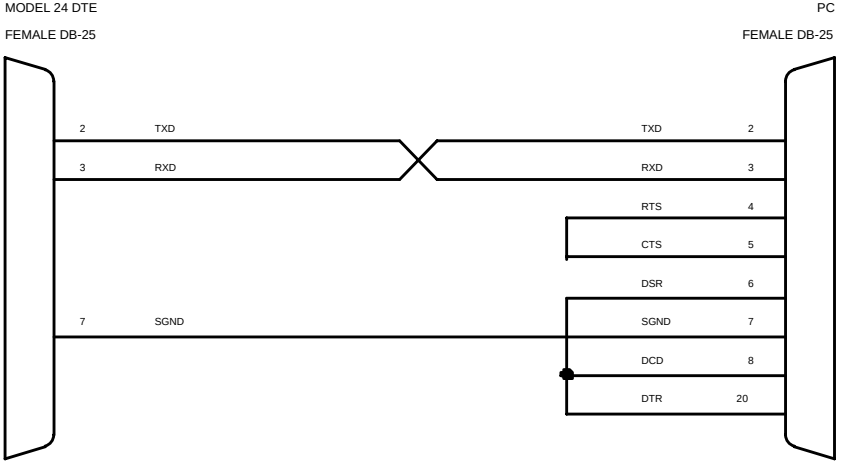
APPENDIX A
CABLING TO MODEL 24SII

A.1 BETWEEN M24SII-V03 I/O MODULE AND IBM PC OR PS/2 (DB-25)

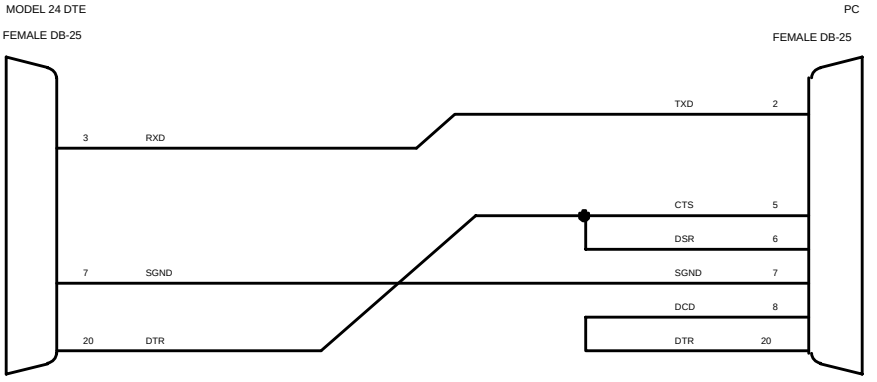
RECOMMENDED CABLING USING HARDWARE OR XON/XOFF HANDSHAKING



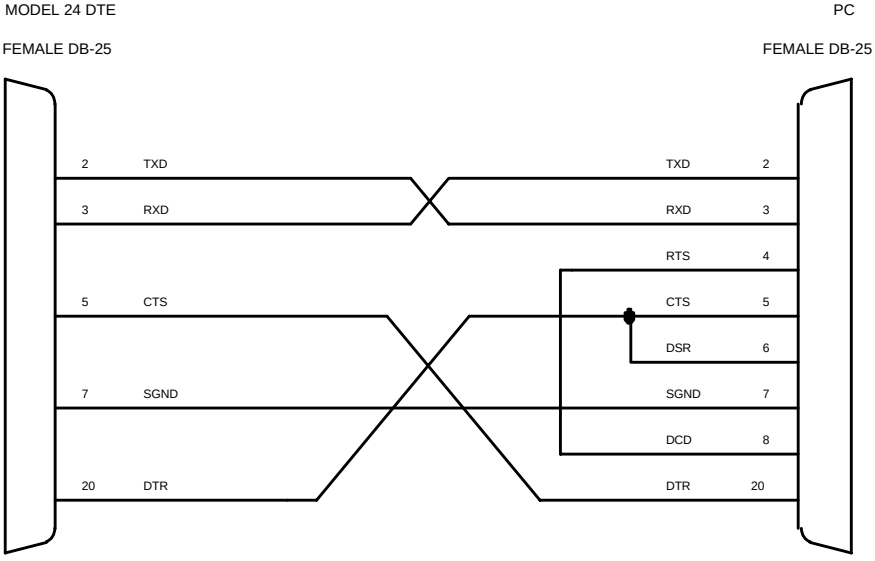
MINIMUM CABLING USING XON/XOFF HANDSHAKING



MINIMUM CABLING USING HARDWARE HANDSHAKING FOR ONE-WAY DATA TRANSFERS

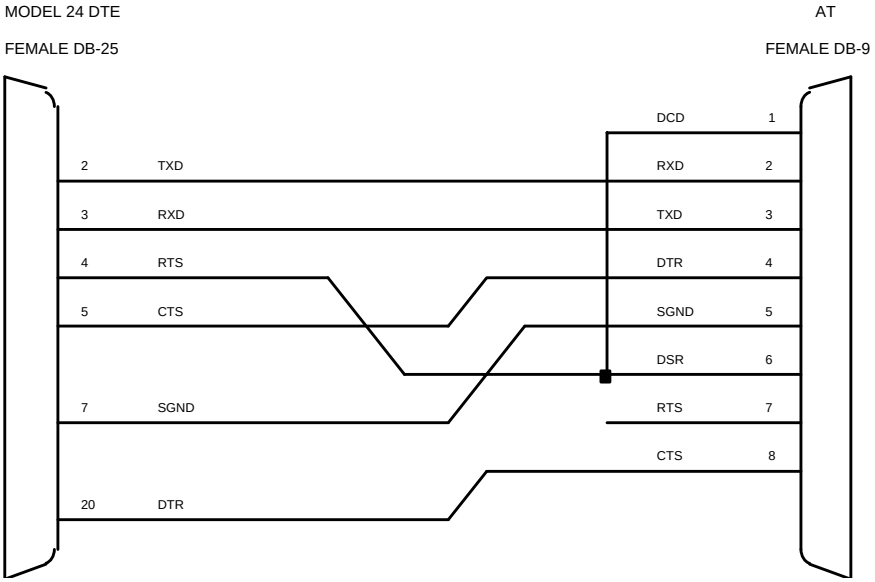


MINIMUM CABLING USING HARDWARE HANDSHAKING FOR TWO-WAY DATA TRANSFERS

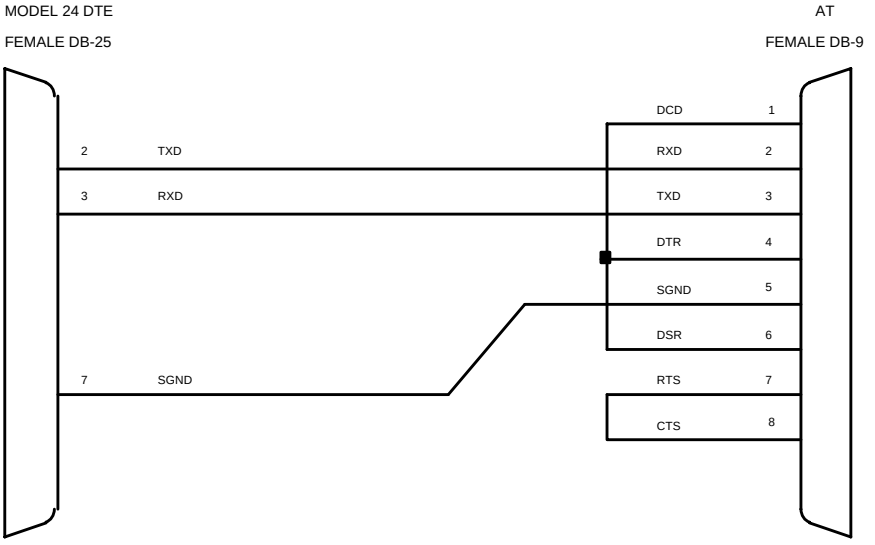


A.2 BETWEEN M24SII-V03 I/O MODULE AND IBM AT (DE-9)

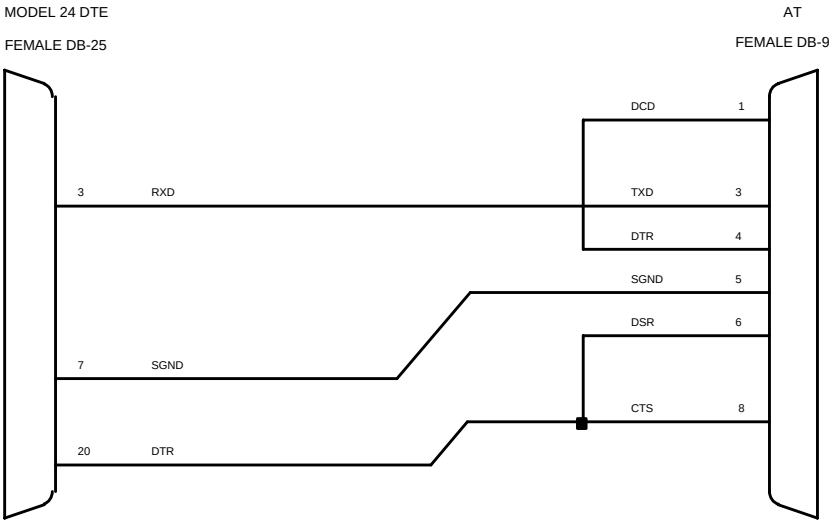
RECOMMENDED CABLING USING HARDWARE OR XON/XOFF HANDSHAKING



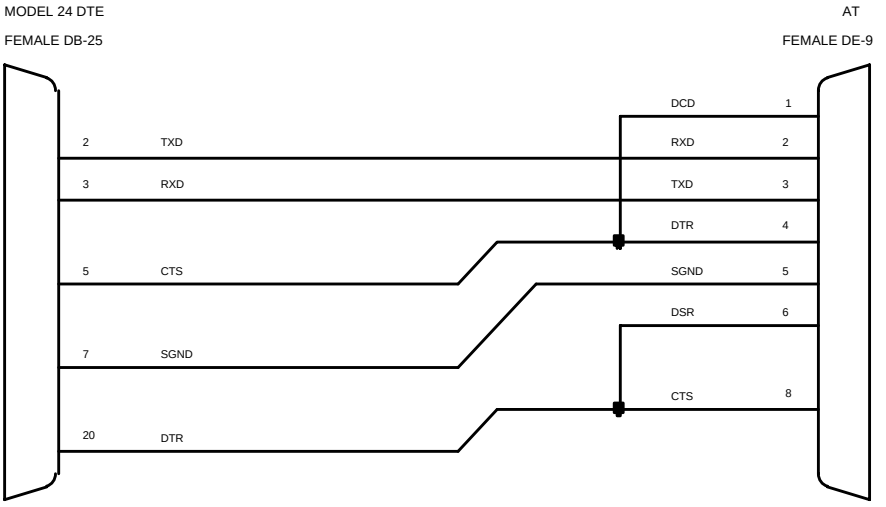
MINIMUM CABLING USING XON/XOFF HANDSHAKING



MINIMUM CABLING USING HARDWARE HANDSHAKING FOR ONE-WAY DATA TRANSFERS

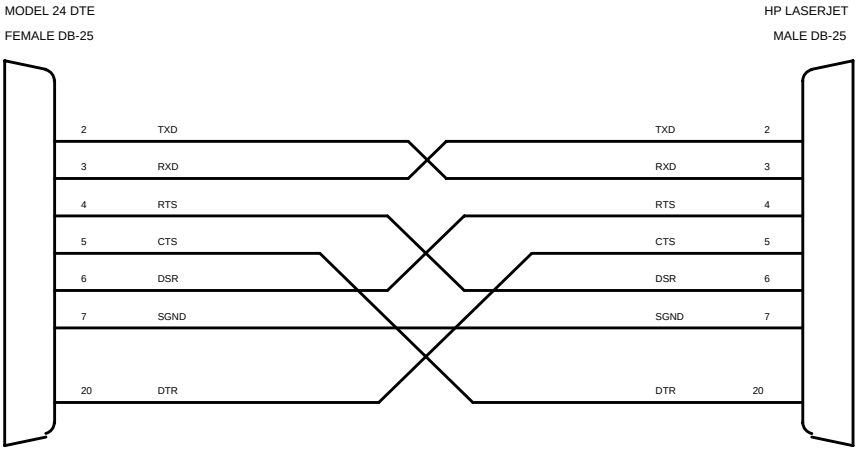


MINIMUM CABLING USING HARDWARE HANDSHAKING FOR TWO-WAY DATA TRANSFERS

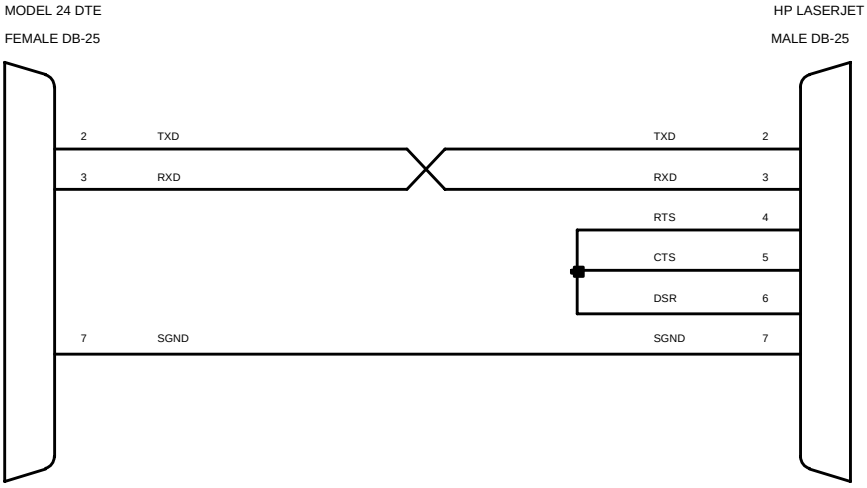


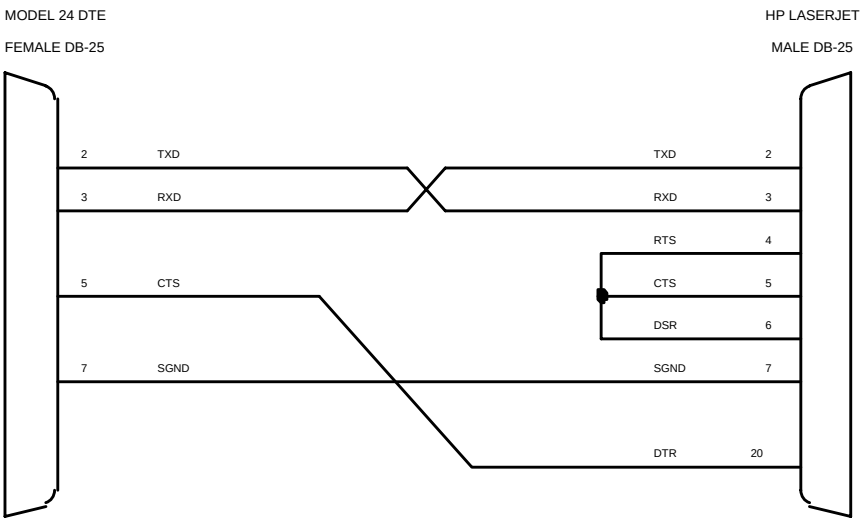
A.3 BETWEEN M24SII-V03 I/O MODULE AND HEWLETT PACKARD LASERJET

RECOMMENDED CABLING USING HARDWARE OR XON/XOFF HANDSHAKING



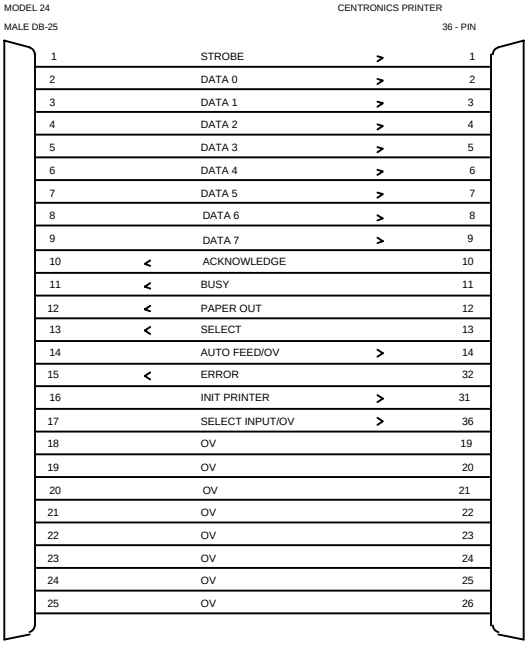
MINIMUM CABLING USING XON/XOFF HANDSHAKING





MINIMUM CABLING USING HARDWARE HANDSHAKING

A.4 BETWEEN MODEL 24SII AND ANY CENTRONICS PRINTER



MODEL 24 MALE DB-25				CENTRONICS PRINTER 36 - PIN
1		STROBE	>	1
2		DATA 0	>	2
3		DATA 1	>	3
4		DATA 2	>	4
5		DATA 3	>	5
6		DATA 4	>	6
7		DATA 5	>	7
8		DATA 6	>	8
9		DATA 7	>	9
10	<	ACKNOWLEDGE		10
11	<	BUSY		11
12	<	PAPER OUT		12
13	<	SELECT		13
14		AUTO FEED/OV	>	14
15	<	ERROR		32
16		INIT PRINTER	>	31
17		SELECT INPUT/OV	>	36
18		OV		19
19		OV		20
20		OV		21
21		OV		22
22		OV		23
23		OV		24
24		OV		25
25		OV		26

A.5 MODULAR CABLING USING M24SII-V06A I/O MODULE

COMPUTER INTERFACE

To interface your computers or terminals to the Model 24SII using *EIA-232* protocol, refer to the RJ-45 adapter drawings below. Refer to *Figure 13* if your computers or terminals have DB-25 male connectors (most IBM XT and PS/2 type computers). Refer to *Figure 14* if your computers have DE-9 male connectors (IBM AT type computers).

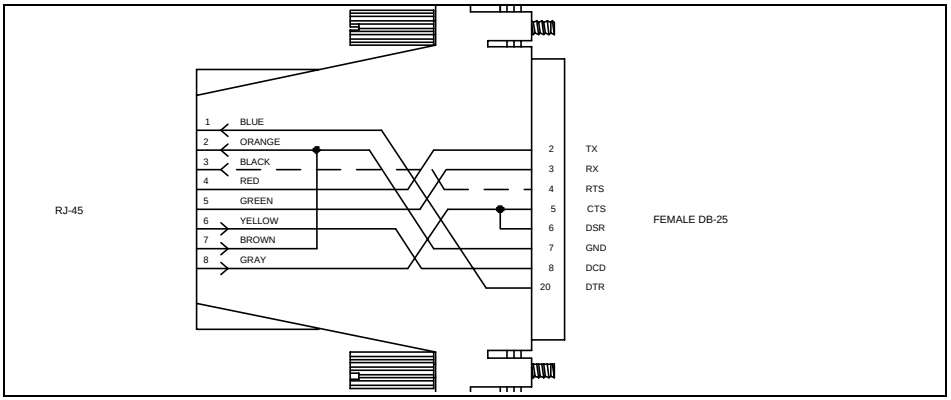


Figure 13: PC, PS/2 Computer/Terminal Adapte
BayTech Part No. 25FRJ45PC-1 for M24SII-V06A (dashed signal used)
BayTech Part No. 25FRJ45PC-2 for M24SII-V07 (dashed signal not used)

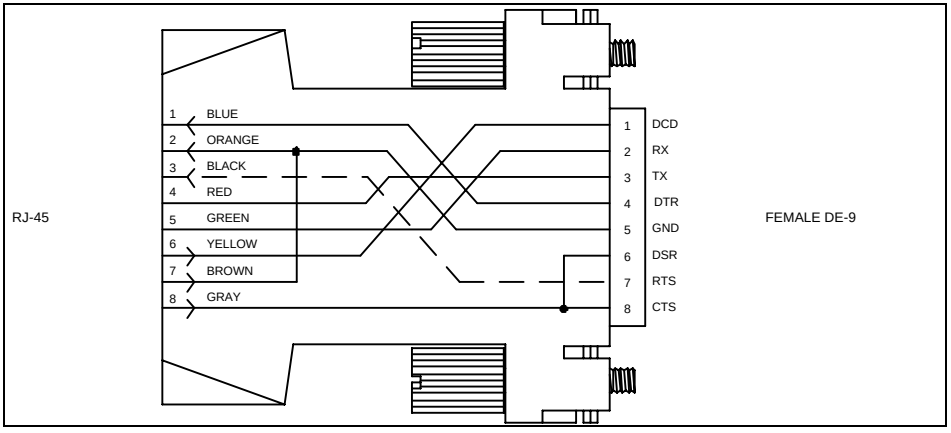


Figure 14: AT Computer Adapter
BayTech Part No. 9FRJ45PC-1 for M24SII-V06A (dashed signal used)
BayTech Part No. 9FRJ45PC-2 for M24SII-V07 (dashed signal not used)

PRINTER/PLOTTER INTERFACE

To interface your EIA-232 serial printers or plotters to the Model 24SII refer to *Figure 15*.

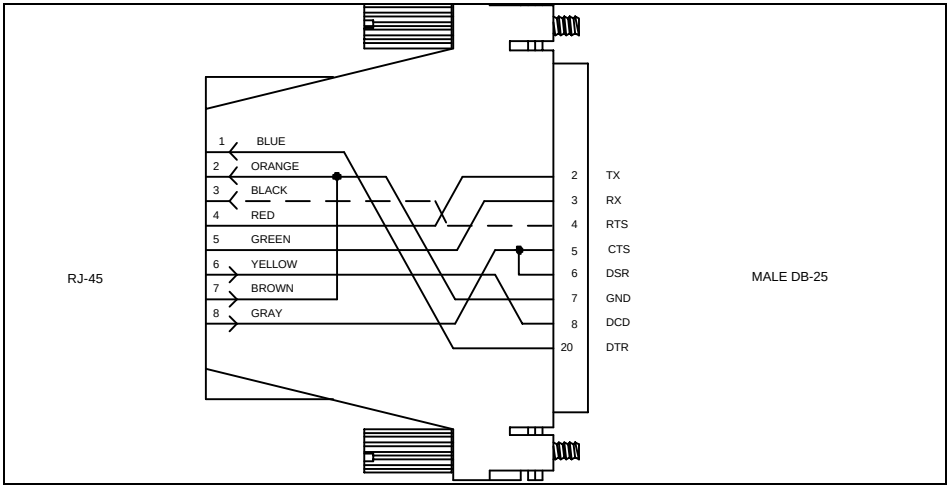


Figure 15: Printer/Plotter Adapter
BayTech Part No. 25MRJ45PR-1 for M24SII-V06A (dashed signal used)
BayTech Part No. 25MRJ45PR-2 for M24SII-V07 (dashed signal not used)

MODEM INTERFACE

To interface your asynchronous modem to the Model 24SII refer to *Figure 16*.

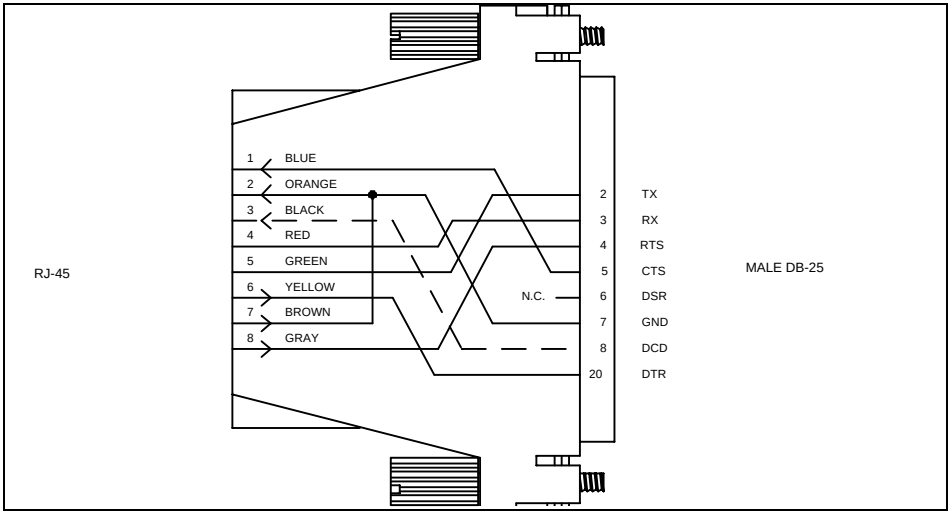


Figure 16: Modem Adapter
BayTech Part No. 25MRJ45MD-1 for M24SII-V06A (dashed signal used)
BayTech Part No. 25MRJ45MD-2 for M24SII-V07 (dashed signal not used)

IMPORTANT: When modular connectors are used as shown in *Figures 13 - 16* above, crossed RJ-45 cables are required. The RJ-45 cable, between the Print Master and your connected equipment must be crossed. See the cable diagram below.

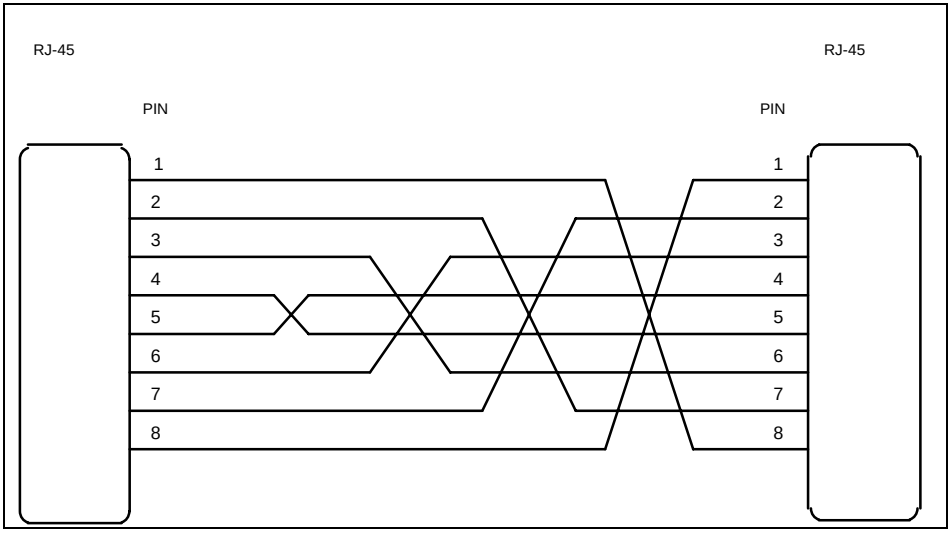


Figure 17: Crossed RJ-45 Cable
BayTech Part No. RJ08X010 (10 feet)

A.6 M24SII-V07 MODULE: EIA-422/EIA-232 PROTOCOL SELECTION AND EXTERNAL POWER

You may configure individual ports on the M24SII-V07 module to communicate with either EIA-422 (default) or EIA-232 protocol. Protocol selection is accomplished via jumper setting. You may also enable external power for individual ports to supply power to the Tran-x SP-01 or SP-02 via jumper setting. If you need to reconfigure any of the ports on this module type, please use the following instructions.

1. **IMPORTANT:** If the M24SII-V07 module is installed in the Model 24SII chassis, remove power from the Model 24SII by positioning the on/off switch to the OFF position and unplugging the power cord. Remove the module by unscrewing the two straight slot screws securing it to the back panel and pulling the module out.

2. Refer to *Appendix D.8* and locate the four nine-position jumper locations for protocol selection and the four three-position jumper locations for external power. The jumper locations are marked on the solder side of the connector board for protocol selection and external power respectively as *JP1* and *JP5* for Port 1, *JP2* and *JP6* for Port 2, *JP3* and *JP7* for Port 3, and *JP4* and *JP8* for Port 4.

3. Each port is configurable for EIA-422 or EIA-232 protocol by installing a six-positon jumper to either the *422* or *232* position as marked on the connector board. The center row of holes for each port will be occupied by three of the pins on the jumper and the row of holes for either EIA-422 or EIA-232 will be occupied by the other three pins of this jumper.

4. External power is enabled for each port by installing a two-position jumper to the *+12* position (as marked on the connector board) and the center position of the jumper location.

A.7 MODULAR CABLING USING M24SII-V07 I/O MODULE

A.7.1 RJ-45 (8-WIRE) CABLING

NOTE: If you have configured a port on the M24SII-V07 I/O module to use EIA-232 Protocol and 8-wire Operation, please refer to *Appendix A.5* for recommended adapter/cabling information.

If you have configured a port on the M24SII-V07 module to use EIA-422 Protocol, 8-wire Operation, and you are not connecting this port to another BayTech product, please see *Figure 9* in *Section 5.5.1* for a recommended cabling diagram.

If you are connecting another BayTech device (such as Tran-x) to a port on the M24SII-V07 module as described, an RJ-45 crossed cable is required to connect the two devices as shown in *Figure 18* below.

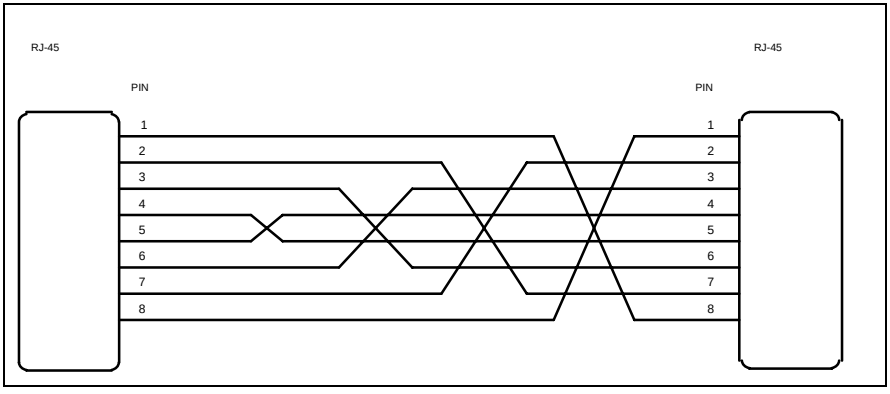


Figure 18: Crossed RJ-45 Cable
BayTech Part No. RJ08X010 (10 feet)

NOTE: Before connecting a Tran-x device to the M24SII-V07 module using this configuration, you must make sure the Tran-x has been configured to use 8-wire Operation. Please see the Tran-x Operator's Manual for instructions.

A.7.2 RJ-11 (4-WIRE) CABLING USING EIA-232 PROTOCOL AND BIDIRECTIONAL PRINTER SHARING MODE

COMPUTER INTERFACE

To interface your computers or terminals to the M24SII-V07 module using 4-wire and bidirectional operation, refer to the RJ-11 adapter drawings below. Refer to *Figure 19* if your computers or terminals have DB-25 male connectors (most IBM XT and PS/2 type computers). Refer to *Figure 20* if your computers have DE-9 male connectors (IBM AT type computers).

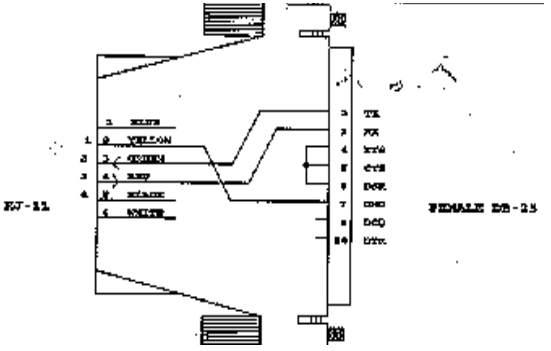


Figure 19: PC, PS/2 Computer/Terminal Adapter
BayTech Part No. 25FRJ11PC-X

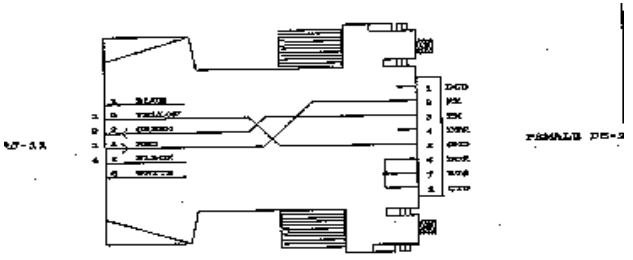


Figure 20: AT Computer Adapter
BayTech Part No. 9FRJ11PC-X

PRINTER/PLOTTER INTERFACE

To interface your EIA-232 printers or plotters to the M24SII-V07 module using 4-wire and bidirectional operation, refer to the adapter drawing show in *Figure 21*.

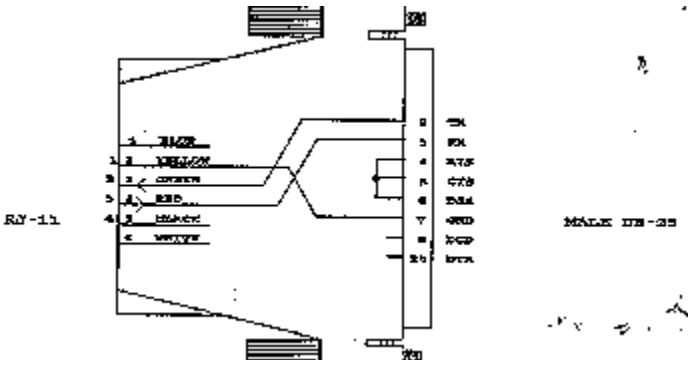


FIGURE 21: Printer/Plotter Adapter
BayTech Part No. 25MRJ11PR-X

IMPORTANT When modular adapters are used as shown in *Figures 19 - 21* above, crossed RJ-11 cables are required. See the cable diagram below.

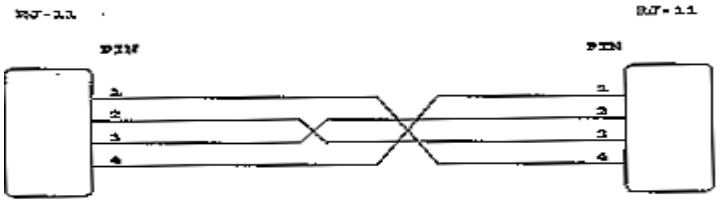


FIGURE 22: Crossed RJ-11 Cable
BayTech Part No. RJ04X010 (10 feet)

A.7.3 RJ-11 (4-WIRE) CABLING USING EIA-232 PROTOCOL AND UNIDIRECTIONAL PRINTER SHARING MODE

COMPUTER INTERFACE

To interface your computers or terminals to the M24SII-V07 module using 4-wire and unidirectional operation, refer to the RJ-11 adapter drawings below. Refer to *Figure 23* if your computers or terminals have DB-25 male connectors (most IBM XT and PS/2 type computers). Refer to *Figure 24* if your computers have DE-9 male connectors (IBM AT type computers).

connectors (IBM AT type computers).

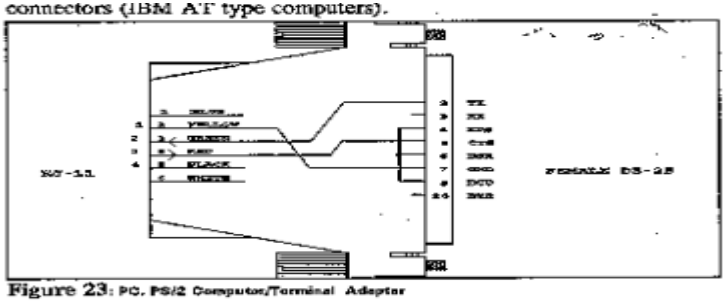


Figure 23: PC, PS/2 Computer/Terminal Adapter
BayTech Part No. 25FRJ11PC-H

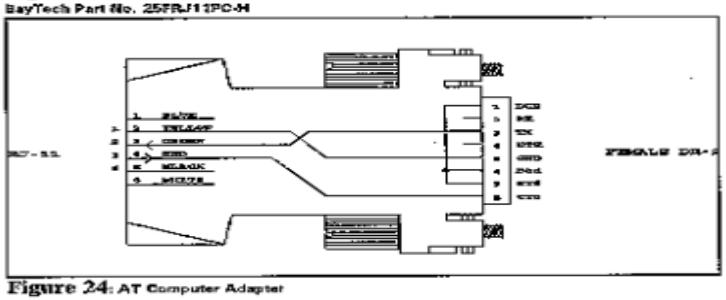


Figure 24: AT Computer Adapter
BayTech Part No. 9FRJ11PC-H

PRINTER/PLOTTER INTERFACE

To interface your EIA-232 printers or plotters to the M24SII-V07 module using 4-wire and unidirectional operation, refer to the adapter drawing show in *Figure 25*.

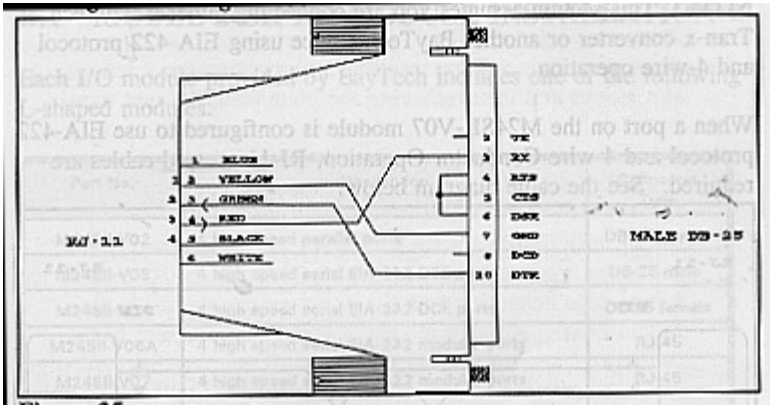


Figure 25: Printer/Plotter Adapter
BayTech Part No. 25MRJ11PR-H

IMPORTANT When modular adapters are used as shown in *Figures 19 - 21* above, crossed RJ-11 cables are required. See the cable diagram below.

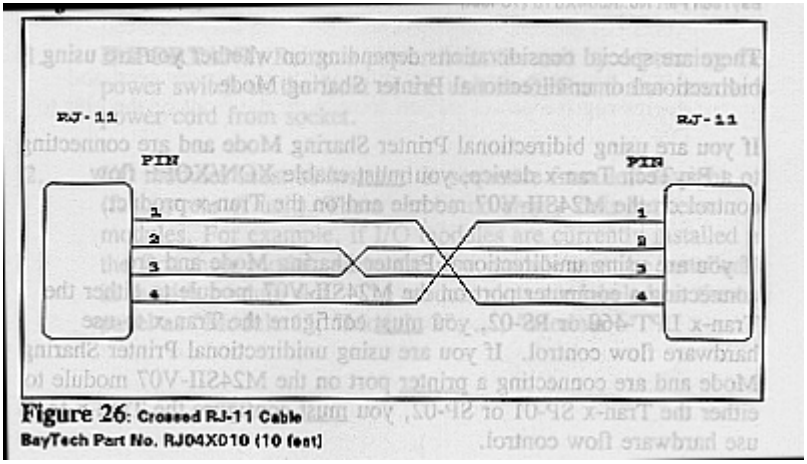


Figure 26: Crossed RJ-11 Cable
BayTech Part No. RJ04X010 (10 feet)

A.7.4 RJ-11 (4-WIRE) CABLING USING EIA-422 PROTOCOL

NOTE: This section assumes you are connecting either a BayTech Tran-x converter or another BayTech device using EIA-422 protocol and 4-wire operation.

When a port on the M24SII-V07 module is configured to use EIA-422 protocol and 4-wire Operation, RJ-11 crossed cables are required. See the cable diagram below.

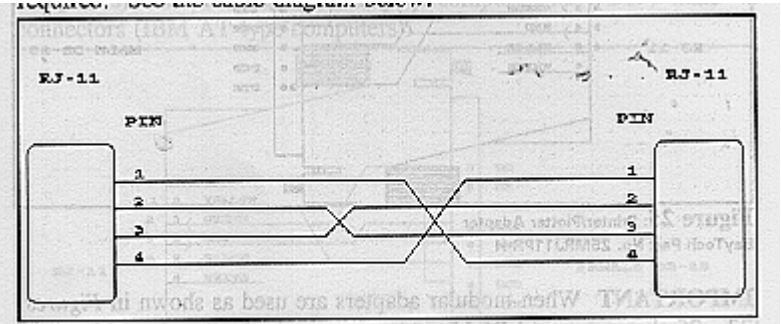


Figure 27: Crossed RJ-11 Cable
BayTech Part No. RJ04X010 (10 feet)

There are special considerations depending on whether you are using bidirectional or unidirectional Printer Sharing Mode.

If you are using bidirectional Printer Sharing Mode and are connecting to a BayTech Tran-x device, you must enable XON/XOFF flow control on the M24SII-V07 module and on the Tran-x product.

If you are using unidirectional Printer Sharing Mode and are connecting a computer port on the M24SII-V07 module to either the Tran-x LPT-460 or PS-02, you must configure the Tran-x to use hardware flow control. If you are using unidirectional Printer Sharing Mode and are connecting a printer port on the M24SII-V07 module to either the Tran-x SP-01 or SP-02, you must configure the Tran-x to use hardware flow control.

APPENDIX B
MODEL 24SII MODULE INSTALLATION

B.1 MODEL 24SII I/O MODULE INSTALLATION

Each I/O module provided by BayTech includes one of the following L-shaped modules:

Part No.	Description	Connector Type
M24SII-V02	4 high speed parallel ports	DB-25 female
M24SII-V03	4 high speed serial EIA-232 DTE ports	DB-25 male
M24SII-V04	4 high speed serial EIA-232 DCE ports	DB-25 female
M24SII-V06A	4 high speed serial EIA-232 modular ports	RJ-45
M24SII-V07	4 high speed serial EIA-422 modular ports	RJ-45
M24SII-V08	4 high speed serial current loop ports	DB-25 male

You will need the following equipment:

1 x straight-slot screwdriver
1 x phillips-head screwdriver

1. **IMPORTANT:** Remove power from the unit by depressing the power switch on the front of the unit to OFF and also remove power cord from socket.

2. I/O modules must be installed in sequence from left to right (facing rear of unit). There can be no empty slots between modules. For example, if I/O modules are currently installed in the first three module slots, the new module must be installed in the 4th module slot. The module slots are labeled on the top panel as "Module 1", "Module 2", ..., "Module 6".

NOTE: Module 1 must be a serial module (i.e., Module 1 may be occupied by any module part number other than M24SII-V02).

3. Remove the flat aluminum plate covering the slots into which the new module will be installed by loosening the 2 straight slot screws and then removing the plate from the rear panel.

   Save the aluminum plate in the event you have to remove the module in the future.

4. Install the new module by sliding the horizontal card edges along the grooves inside the module slot. Each I/O module has a card-edge connector that fits into a receptacle inside the Model 24SII. Apply a moderate amount of pressure to the connector board of the I/O module until you feel the card edge connector slip into the receptacle inside. You will not be able to mount back plate of the I/O module to the chassis if the I/O module is not installed all the way.

5. Mount the back plate of the I/O module to the Model 24SII's chassis by tightening the 2 straight slot screws on the back plate.

6. Apply power to the unit by plugging in the power cord and depressing the power switch located on the front of the unit to ON.

B.2 MODEL 24SII MEMORY MODULE INSTALLATION

Each memory module provided by BayTech includes one of the following modules: M24SII-M01 (0 to 4MB) or M24SII-M02 (0 to 16MB).

You will need the following equipment:

1 x phillips-head screwdriver
1 x 3/8 in. nut driver or socket

1. **IMPORTANT:** Remove power from the unit by depressing the power switch on the front of the unit to OFF and also remove power cord from socket.

2. Using the phillips-head screwdriver, remove the 4 phillips-head screws holding the top cover of the unit. After screws are removed, lift off cover.

3. Determine which type of memory module you are installing. The 4MB memory module (part no. M24SII-M01) allows you to upgrade the total memory to 4MB using 1MB zig zag in-line packages (ZIPs). The 16MB memory module (part no. M24SII-M02) provides buffer expansion up to 16MB using either 1MB x 8 or 4MB x 8 single in-line memory modules (SIMMs).

4. Determine the location where the new memory module will install into. Refer to *Appendix D.2*. This mechanical layout shows the location where the M24SII-M01 memory module installs into which is marked *11*. If you are installing the M24SII-M02 memory module, the location where it installs into is adjacent to the location shown for the M24SII-M01 and is <u>not</u> marked on the drawing.

CAUTION: You must install the new memory module into the appropriate location to assure proper operation. You may only have one type of memory module installed.

5. Remove the four nuts on the appropriate location with the nut driver or socket and place the nuts in a safe place.

6. Install the new memory module into the appropriate location by matching the four holes on the module with the bolts on the bottom panel. The ribbon cable should face away from the LEDs on the front panel. Secure the memory module in place with the four nuts by tightening them with the nut driver or socket.

7. Plug the ribbon cable onto the appropriate J-connector on the main board.

8. If you need to install any additional memory onto the memory module, please refer to *Appendix C.1* for the M24SII-M01 memory module or *Appendix C.2* for the M24SII-M02 memory module. If not, replace the top panel. The installation is now complete.

APPENDIX C
BUFFER EXPANSION/EPROM UPGRADE

C.1 M24SII-M01 BUFFER EXPANSION ZIP MODULE INSTALLATION

Each one megabyte memory expansion upgrade kit provided by BayTech includes two memory expansion chips (DRAM ICs) which come in a zig zag in-line package (ZIP).

You will need the following equipment:
1 x phillips-head screwdriver.

1. **IMPORTANT:** Remove power from the unit by depressing the power switch on the front of the unit to OFF. Also remove power cord from the AC outlet.

2. Using the phillips-head screwdriver, remove the 4 phillips-head screws holding the top cover of the unit. After screws are removed, lift off cover.

3. With LED side of the unit facing you, look down into the unit and locate the 8 memory expansion module sockets. These zig zag sockets are marked U301, U302,..., to U308 (see Appendix D.4). Note that two or more of these sockets already have memory chips installed.

4. The new memory expansion chips must be installed in the following order: the first megabyte DRAM ICs occupy sockets U301 and U302, the second megabyte DRAM ICs occupy sockets U303 and U304, the third megabyte DRAM ICs occupy sockets U305 and U306, and the fourth megabyte DRAM ICs occupy sockets U307 and U308.

WARNING: If you install the DRAM ICs in any order other than described above, the Model 24SII will not recognize the memory expansion.

5. Locate the diagonal notch on the DRAM IC. This notch must face the transformer when installed in the appropriate socket.

WARNING: If the DRAM ICs are installed in backwards, they will be damaged and become inoperable.

6. Line up the pins of each DRAM IC with the 20 holes in the socket. Hold the DRAM IC straight up so that pins are perpendicular to the holes. Push down on the DRAM IC until it is firmly seated in the holes. Be careful not to bend pins or miss holes.

7. If a DRAM IC needs to be removed, pull straight up and away from the holes. Be careful not to bend pins.

8. Once memory expansion has been completed, replace the cover of the unit and the 4 phillips-head screws that hold it. Apply power to the unit. The upgrade is now complete.

9. To verify memory upgrade, enter the configuration mode (see *Section 8* of the owner's manual.). The installed memory will be displayed in the main configuration menu.

C.2 M24SII-M02 BUFFER EXPANSION SIMM INSTALLATION

Each memory expansion upgrade kit provided by BayTech includes either a 1MB x 8 or 4MB x 8 SIMM (single in-line memory module). You may also use third party SIMMs. The total buffer size may range from 0MB to 16MB with a minimum of 1MB required for operation. Please use the following instructions when installing memory expansion SIMMs.

You will need a phillips-head screwdriver.

1. **IMPORTANT:** Remove power from the unit by depressing the power switch on the front of the unit to OFF. Also remove power cord from socket.

2. Using the phillips-head screwdriver, remove the four phillips-head screws holding the top cover of the unit. After screws are removed, lift off cover.

3. With LED side of the unit facing you, look down into the unit and locate the memory board. The memory board has four sockets for memory expansion. These straight-line sockets are marked *U15*, *U16*, *U17* and *U18* (refer to *Appendix D.5* - M24SII-M02 Memory Board Assembly). Note that one or more of these sockets may already have a memory module installed.

4. U15 must always be occupied by either a 1MB or 4MB SIMM. Any new memory expansion module(s) may be installed in any of the remaining sockets (i.e., U16, U17, or U18) and need not be installed in any specific order.

5. Hold the memory expansion module in your hand so that the card edge connector is facing down.

IMPORTANT: On the memory expansion module, Pin 1 is marked. Pin 1 should be positioned to the left of the unit (with LEDs facing you).

WARNING: If module is plugged in backwards, it will be damaged and become inoperable.

6. Line up the connector of the memory expansion module with the socket. Push down on the memory expansion module until it is firmly seated in the socket.

7. If a memory expansion module needs to be removed, pull straight up and away from the socket.

8. Once memory expansion has been completed, replace the cover of the unit and the 4 phillips-head screws that hold it. Apply power to the unit. The upgrade is now complete.

9. To verify memory upgrade, enter the configuration mode (see *Section 8*). The installed memory will be displayed in the main configuration menu.

C.3 MODEL 24SII MAIN BOARD EPROM UPGRADE

The materials you will receive with your upgrade kit are:
One EPROM (chip with label)

The materials you will need to supply are:
Phillips-head screwdriver
IC DIP extractor or a pair of curved needle-nose pliers

1. **IMPORTANT:** Remove power from the unit by depressing the power switch on the front of the unit to OFF. Also remove power cord from the AC outlet.

2. Remove the cover of the unit by unscrewing the 4 screws located on the top panel with the phillips-head screwdriver.

3. With the front of the unit (LED side) facing away from you, locate socket U2 (see *Appendix D.3* - Main Board Mechanical Layout).

4. Remove existing EPROM from socket U2 with IC extractor or needle-nose pliers. Gradually loosen each side of the chip, alternating pliers from side to side, so as not to bend chip pins. Pull loosened EPROM all the way out.

5. Install new EPROM into socket U2. The EPROM is notched; the notch on the EPROM will point towards the right of the unit. When installing the new chips, be careful not to bend any of the pins. Also make sure all pins fit their sockets.

6. Replace the cover; the upgrade is now complete.

C.4 MODEL 24SII MEMORY MODULE EPROM UPGRADE

The materials you will receive with your upgrade kit are:
1 EPROM (chip with label). This Chip will be marked to identify which memory module type they install into.

The materials you will need to supply are:
Phillips-head screwdriver
IC DIP extractor or a pair of curved needle-nose pliers

1. **IMPORTANT:** Remove power from the unit by depressing the power switch on the front of the unit to OFF. Also remove power cord from the AC outlet.

2. Using the phillips-head screwdriver, remove the 4 phillips-head screws holding the top cover of the unit. After screws are removed, lift off cover.

3. If upgrading the M24SII-M01 memory module, locate socket U102 on the module (see *Appendix D.4*). If upgrading the M24SII-M02 memory module, locate socket U2 on the module (see *Appendix D.5*).

4. Remove existing EPROM from the appropriate socket with IC extractor or needle-nose pliers. Gradually loosen each side of the chip, alternating pliers from side to side, so as not to bend chip pins. Pull loosened EPROM all the way out.

5. Install new EPROM into the appropriate socket. The EPROM is notched; the notch on the EPROM should line up with the notch on the socket. When installing the new chip, be careful not to bend any of the pins. Make sure none of the pins miss their socket. Also make certain that you install the correct EPROM into the appropriate memory module.

6. Replace the cover; the upgrade is now complete.

C.5 MODEL 24SII I/O MODULE EPROM UPGRADE

The materials you will receive with your upgrade kit are:
EPROM(s) (chip(s) with label). Chips will be marked to identify which module type they install into. The upgrade requires one new EPROM per I/O module. You will receive the correct quantity of EPROMs for the number of I/O modules installed that need to be upgraded. Please refer to the following table to determine which EPROM each module type requires

BayTech Part Number	Module Type	EPROM Label Marking
M24SII-V02	4 Port high speed parallel, DB-25F	M24SII DES-4AHS
M24SII-V03	4 Port high speed serial EIA-232, DB-25M, DTE	M24SII DES-4CHS
M24SII-V06A	4 Port high speed serial EIA-232, RJ-45	M24SII DES-4CHS
M24SII-V07	4 Port high speed serial EIA-422, RJ-45	M24SII DES-4CHS
M24SII-V08	4 Port high speed serial current loop, DB-25M	M24SII DES-4CHS

The materials you will need to supply are:
Straight-slot screwdriver
IC DIP extractor or a pair of curved needle-nose pliers

1. **IMPORTANT:** Remove power from the unit by depressing the power switch on the front of the unit to OFF. Also remove power cord from the AC outlet.

2. Remove the appropriate I/O module by loosening the 2 straight-slot screws that connect the back panel of the I/O module to the chassis and then pulling the module out.

3. If upgrading a serial module, locate socket U3 on the appropriate I/O module (see *Appendix D.7*). If upgrading the M24SII-V02 parallel module, locate socket U6 on the module (see *Appendix D.6*).

4. Remove existing EPROM from the appropriate socket with IC extractor or needle-nose pliers. Gradually loosen each side of the chip, alternating pliers from side to side, so as not to bend chip pins. Pull loosened EPROM all the way out.

5. Install new EPROM into the appropriate socket. The EPROM is notched; the notch on the EPROM should line up with the notch on the socket. When installing the new chips, be careful not to bend any of the pins. Make sure none of the pins miss their sockets. Also make certain that you install the correct EPROM into the appropriate I/O module.

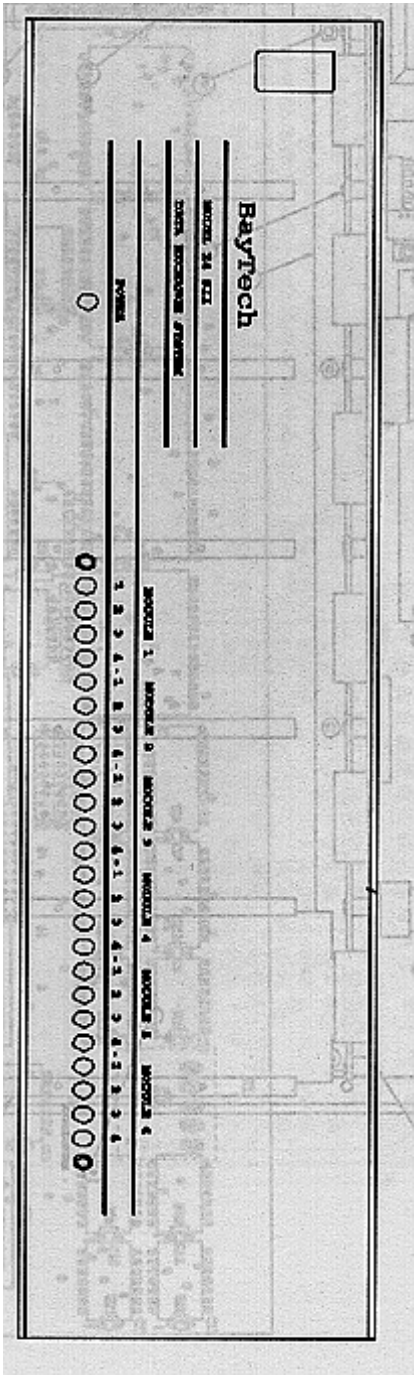
6. If more than one I/O module is installed into the Model 24SII, locate the appropriate socket on those modules and follow the procedures listed above under steps 2 through 5. Again, refer to the label on the EPROMs to verify that you are installing the correct EPROM into the module.

7. Re-install the module(s) as described in *Appendix B.1* and apply power to the unit. The upgrade is now complete.

Before you begin operations, check the Model 24SII's configuration status to make certain it matches your application. If configuration changes (baud rates, handshaking, etc.) are required, you must make these changes in the configuration mode. See *Section 8* for complete instructions.

APPENDIX D
MECHANICAL LAYOUTS

D.1 MODEL 24SII FRONT PANEL



D.2 MODEL 24SII UNIT ASSEMBLY

D.3 MODEL 24SII MAIN BOARD

D.4 M24SII-M01 MEMORY BOARD ASSEMBLY

D.5 M24SII-M02 MEMORY BOARD ASSEMBLY

D.6 I/O MODULE M24SII-V02: 4 PARALLEL PORTS

D.7 I/O MODULES M24SII-V03/V06/V08: 4 HIGH SPEED SERIAL PORTS (MAIN BOARD)

D.8 I/O MODULE M24SII-V07: 4 HIGH SPEED SERIAL PORTS (CONNECTOR BOARD)

APPENDIX E
TROUBLESHOOTING

Please check this troubleshooting guide before calling BayTech Tech Support.

NOTE: This troubleshooting guide is geared towards the IBM PC, AT, XT family and compatibles.

PROBLEM	SYMPTOM	CAUSE	SOLUTION
Data does not print	Power LED does not illuminate	Unit is not turned on	Put switch on
		A/C power cord is not plugged in	Plug power cord into proper A/C power outlet
		Fuse blown	Unplug A/C power cord and check internal fuse. If blown, replace with same type and rating of fuse
	On power-up, all LEDs come on and stay on	Model 24SII DES failure	Call BayTech technical support
	No port LEDs illuminate	PC serial cable	Check cabling between PC and Model 24SII DES. Check handshaking lines using TERM program. All lines (except DCD which is not used) should be high. If lines are high, turn Model 24SII DES off. You should notice CTS and DSR lines go low. If they do not go low, there is a good chance you have an error in your cable. Typing characters from TERM should illuminate PC LED on Model 24SII DES.
		PC com port	Check installation procedures for PC's serial port. COM1 must generate an interrupt on IRQ4 (COM2 on IRQ3). Also, check any jumpers for defining port configuration which should be jumpered for DTE, not DCE.
		PC parallel cable	Check cable's continuity and pin configuration.
Data does not print (continued)	No port LEDs illuminate (continued)	Model 24SII DES is connected to a non-designated COM port	Make sure Model 24SII DES is connected to a designated PC COM port. Check using TERM program. Turn Model 24SII DES off, and you **should not** see CTS/DSR lines toggle if you are on a non-designated COM port.
		PC is connected to	Enter Model 24SII DES configuration mode and in the Status menu, check the

PROBLEM	SYMPTOM	CAUSE	SOLUTION
		Model 24SII DES port which is configured as a printer port	Port Designation.
		LPTx not rerouted to COMx port for PC serial communicatio n	Reroute COM port through DOS as follows: MODE LPTx:=COMy (x=1, 2 or 3; y=1 or 2).
		Model 24SII DES is in configuration mode (all LEDs will be illuminated)	Exit configuration mode or recycle power.
	PC and Printer port LEDs illuminate	Printer cable	Correct parallel or serial cable between Model 24SII DES and printer
		Model 24SII DES serial computer port does not match the configuration of the PC	Enter Model 24SII DES configuration mode and match to the PC the baud rate, word size, stop bits, parity, and handshaking.
		Model 24SII DES serial printer port does not match the configuration of the printer	Enter Model SII configuration mode and match to the printer baud rate, word size, stop bits, parity, and handshaking.
	Printer port LED stays on	Printer is off-line	Make sure printer is on-line.
Data does not print (continued)	HP LaserJet gives "Error 22" message	Error in serial printer cable (no data flow control)	Check flow control between M24SII and printer. A way to check is to force an error condition at the printer (i.e. remove paper tray from laser printer or turn off-line with power still applied). Send print job to printer. If printer LED goes off, you can conclude no handshaking was done. Check pin 20 of peripheral to pin 5 of Model 24SII DES and/or pin 11 on parallel ports for continuity by using an ohm meter to check resistance from end to end.
	HP LaserJet gives "Error 40" message	Model 24SII DES serial printer port does not match the configuration	Enter Model SII configuration mode and set the printer port's baud rate to match the printer's baud rate or enter LaserJet's configuration mode and program the printer's baud rate to match the Model SII.

PROBLEM	SYMPTOM	CAUSE	SOLUTION
		of the printer	
	HP LaserJet gives "Error 40" message	Serial printer cable or Model 24SII DES losing power during transmission to printer	The HP LaserJet will give this message when its DSR line (Pin 6) goes from positive to negative or zero volts. Verify that Pin 6 on the printer side of the serial cable is either connected or jumpered as shown in *Appendix A.3*. Also verify M24SII's AC power source.
Cannot configure Model 24SII DES	Control-T followed by capital C (or F1 in TERM program) sent in dumb terminal mode does not invoke configuration menus	Cable	Use correct serial cable between PC and Model 24SII DES. Check handshaking lines in TERM program.
		Port configuration	Match baud rate, word size, stop bits, parity and handshaking lines between Model 24SII DES and PC. This can be done using TERM program.
		Port selection	Ensure PC COM port is connected to configuration port of Model 24SII DES.
		Software	Use dumb terminal or a PC running a terminal emulation program (TERM supplied by BayTech, or another program such as CrossTalk).
Cannot configure Model 24SII DES (continued)	Port LEDs are illuminated when trying to access configuration mode	User activity	Wait until current activity between PC and printer is completed. There should be no red LEDs illuminated when trying to enter the configuration mode.
		Bad PC COM port	Try a different COM port or PC.
		PC serial card uses IRQ4 instead of IRQ3	Reconfigure serial card, use a different serial card, or different terminal emulation program.
Prints Garbage	Missing Characters	Incorrect cable type (no data flow control)	Check manual for correct pin-outs between PC and Model 24SII DES, and between Model 24SII DES and printer. Check handshaking. A way to check is to force an error condition at the printer (i.e. remove paper tray from laser printer or turn off-line with power still applied). Send print job to printer. If printer LED goes off, you can conclude no handshaking was done. On serial ports, check Model 24SII DES configuration to match handshaking (i.e. you must be using CTS/DTR or XON/XOFF for both Model 24SII DES and printer). Also

PROBLEM	SYMPTOM	CAUSE	SOLUTION
			check pin 20 of peripheral to pin 5 of Model 24SII DES and/or pin 11 on parallel ports for continuity by using an ohm meter to check resistance from end to end.
		Parallel cable length	Parallel cable should not exceed 15 feet. Use shorter length or higher-quality cable.
		Configuration problem	Check baud rate, word size, stop bits and parity on serial ports. It is best to be at 8 word size and no parity. BayTech does not recommend a configuration of 7 word size with odd or even parity.
	Random Garbage Characters	Serial Port Configuration	In Model 24SII DES configuration mode, match baud rates, word size, stop bits, parity and handshaking with the conned device
		Cable length	If serial cable, length should not exceed 150 feet. If parallel cable, length should not exceed 15 feet.
Cannot select printer	Incorrect LEDs illuminate when sending print job	Port selection	Port Select Code may be going out on wrong port; e.g. Port Select Code is going out LPT1 and Model 24SII DES is connected to COM1. Also make sure selected port is designated as a printer port and not as a computer port.
		Improper Port Select Sequence	Match Port Select Code you are sending to Port Select Code specified in configuration mode. Check case of Port Select Code (upper or lower). Also, remove any spaces between Port Select Code and port number.
		You are in Port Select Mode B with zero (0) timeout	Switch to Port Select Mode A or enter a timeout value, both via configuration mode.
	Some sort of Port Select code prints on document when using RAMEXEC	Port Select Code in SETUP does not match Port Select Code configured in Model 24SII DES	Match the Port Select Codes exactly.
Cannot select Printer during print job		You are using Port Select Mode B (port selection at beginning of print job only)	Switch to Port Select Mode A in configuration (port selection anytime while sending) or wait for computer LED to go out before selecting printer.
RAMEXEC	Have to reboot	LPTx not	Reroute LPTx using the following DOS

PROBLEM	SYMPTOM	CAUSE	SOLUTION
hangs up PC when executed	PC	rerouted for serial communicatio n	command: MODE LPTx:=COMy (x=1, 2 or 3; y=1 or 2).
		Floating condition on DSR or CTS lines (i.e., cable problem)	Using TERM program, check handshaking line. Power down Model 24SII DES. If DSR, DCD and CTS lines do not go low, cable wiring needs to be checked
Print job switches printers in the middle of a print job		Timeout period too short	Increase Input Inactivity Timeout period via configuration mode
Print job switches printers in the middle of a print job (continued)		Characters used in Port Select Code are too common and may inadvertently appear somewhere in the print job	Change Port Select Code to a unique character sequence.
Print jobs intermix		Timeout period is too short	Increase Input Inactivity Timeout period via configuration mode.
Model 24SII DES does not timeout	LEDs do no go out	Timeout is set to zero (0)	Increase Input Inactivity Timeout period via configuration mode.
		Port selected is designated as a computer port (e.g., computer-to-modem connection)	Send the disconnect sequence which consists of the Port Select Code followed by a terminating character: OD Hex (enter/return) or OA Hex (line feed).
Print jobs are lost when multiple users are sending print jobs		Printer port is not connected or is connected to a powered-down printer. Data is being routed to a powered-down printer and is lost (going into the bit bucket)	Make sure printer is plugged in, turned on, and in the "off line" mode. This "pulls" the DTR line low and enables transmission to the Model 24SII DES. Or, Model 24SII DES could be in contention mode, and when first printer is busy, print job is routed to the next available printer which is turned off or is not connected. It is highly recommended that printers connected to the Model 24SII DES be plugged in and turned on at all times; however, printers need not be in the "on-line" mode.
Unable to dial out of external modem after	Modem gives no indication of dialing out	Mismatch in serial configuration	Configure the modem communications software to communicate at the same serial parameters (baud rate, etc.) that

PROBLEM	SYMPTOM	CAUSE	SOLUTION
connection is made		between modem communicatio n software and Model 24SII DES	the computer normally uses to print with.

APPENDIX F
INDEX

4-wire 3, 4, 6-8, 15, 16, 20, 35, 36, 38-45, 49, 80, 81, 112-116
8-wire 3, 4, 6-8, 15, 16, 20, 35-37, 49, 80, 81, 111

A

Adapters 33, 35, 113, 115
Applications 2, 3, 11, 34, 47, 48, 51-53, 98
Applications 98
ASCII 7, 18, 19, 47, 52, 54, 56, 64, 65, 67, 78
ASCII character string 47, 78
Asynchronous 8, 108
Autobaud detect 60
Autoexec 23-25

B

Baud rate 3, 6, 16, 17, 20, 49, 59, 60, 67, 68, 80-83, 96, 138, 139, 140, 142
Bidirectional 6-8, 16, 20, 35, 36, 38, 41, 42, 49, 57, 81-83, 96, 112, 113, 116
Bit bucket 142
Buffer 2, 3, 8, 9, 27, 30, 49, 51, 52, 54-57, 61-64, 66, 83, 119, 121, 123
Buffer clearing 56
Buffer expansion 119, 121, 123
buffering of print data 51, 55
Busy message 57-59

C

Cabling 2, 4, 11, 14, 15, 25, 29, 30, 32, 33, 35, 37-40, 100, 107, 111, 112, 114, 116, 137
Case sensitive 69
CDT 98
Centronics 9, 25, 26, 106
Clear buffer command 54-56
Clear-to-Send 61, 63
CLR 54, 56
Communications Software 57, 58, 142
Computer port 2, 6, 7, 11, 14, 15, 19, 39, 43, 46, 49, 52, 55, 58, 59-61, 63, 67-69, 71, 73, 75, 76, 79, 80, 85-87, 90, 94, 95, 116, 138, 141, 142
Computer-to-computer 14, 46-49, 57-59
Computer-to-computer communication 14, 46, 48, 49, 57
Computer-to-computer connection 57-59
Computer-to-peripheral 49, 51
Computer-to-peripheral communication 49
COMX 15, 24, 138
Configuration mode 3, 11, 15, 16, 18, 38, 41, 51, 52, 66-69, 79, 81, 84, 96, 122, 124, 128, 138-142
Configuration port 3, 15, 16, 66-68, 139
Connectors 2, 8, 9, 14, 25, 27, 30, 33, 35, 104, 107, 109, 112, 114
Contending 52
Contention mode 6, 15, 19, 22, 50, 52, 53, 142
Control characters 67
Control-C 89
Control-T 16, 18, 67-70, 139
CrossTalk 58, 139
CRT 17, 89
CST 98
CTS 8, 17, 18, 27, 30, 33, 36, 40, 61-63, 137, 138, 140, 141
Current loop 117, 127

D

Data Communication Equipment 27, 30, 33
Data flow control 61, 139, 140
Data Terminal Equipment 27, 30, 33
Data Terminal Ready 61
Data transfer 2
DB-25 8, 9, 14, 25-27, 30, 33, 35, 100, 104, 107, 112, 114, 117
DCD 17, 18, 137, 141
DCE 8, 14, 27, 28, 30, 31, 33, 117, 137
DE-9 33, 35, 102, 107, 112, 114
Default printer 3, 6, 7, 15, 22, 49, 50, 52, 53, 69, 70, 72, 84, 94, 95
Default printer assignment 3, 6, 7, 15, 22, 50, 52, 69, 70, 72, 84, 94, 95
Dimensions 5, 8, 9
Disconnect code 21
Diskette 12, 13, 67
DOS 17, 21, 23, 24, 47, 50, 52, 54, 56, 64, 65, 138, 141
Draftmaster 3
DSR 17, 18, 30, 33, 137-139, 141
DTE 8, 14, 27, 28, 30, 31, 33, 117, 127, 137
DTR 8, 17, 18, 27, 30, 33, 36, 39, 49, 55, 61, 62, 140, 142
Dumb terminal mode 139
Duplex 8, 14, 17, 57, 59
Dynamically allocated buffer 2, 55

E

EIA-232 8, 25, 27, 28, 30, 31, 33, 35-40, 104, 107, 108, 110, 111, 112-115, 117, 127
EIA-422 4, 8, 35-37, 41-45, 110, 111, 116, 117, 127
Emulation 3, 17, 18, 67, 139, 140
Ending a print job 54
Environment 5, 50
Eprom 121, 125-128
Error condition 139, 140
Expansion slots 5

F

Factory-default settings 15
FAX 98
Federal communications commission 99
File transfer 57, 58
Floating condition 141
Flow control buffer 8, 9
Form feed mode 3, 6, 7, 15, 21, 69, 70, 72, 84, 87, 88
Full duplex communication 14, 17, 57, 59

G,H

GND 28, 31, 33, 36-40
Handshake In 33, 36, 40, 44
Handshake Out 33, 36, 39, 42
Handshaking 8, 9, 11, 17, 18, 28, 31, 36, 38-42, 44, 61-64, 80, 128, 137-141
Hewlett Packard 104
HP 3000 option 65
HSI 8, 36, 37, 43-45
HSO 8, 36, 37, 42-45

I

I.D. page message 3, 6, 7, 15, 19, 22, 46, 50, 66, 69, 70, 72, 73, 84, 89-93
I.D. page printing schedule 66
I/O module 3, 15, 27, 30, 33, 35, 36, 43, 44, 107, 111, 117, 118, 127, 128, 134, 136
IBM 3, 2, 11, 17, 19, 25-27, 30, 33, 67, 74, 100, 102, 107, 112, 114, 137
IC 122, 125-128
In-line spoolers 98
Indicators 5
Input Flow Control 64
Input inactivity timeout 3, 6, 7, 15, 21, 48, 49, 54-56, 69, 70, 72, 84-86, 142
Intermix 142

J,K,L

Jumper 35, 110
Kermit 58
L-shaped 117
Laser 1, 19, 50, 139, 140
Laserjet 3, 1, 21, 65, 104, 139
LED 5, 14, 18, 55, 121, 123, 125, 137-141
Logical name 6, 7, 15, 19, 46, 50, 69-76, 79, 80, 84, 85, 87, 88, 90-95
LPT 1, 4, 43, 116
LPTx 23, 138, 141, C

M

Main board eprom upgrade 125
Main board mechanical layout 125
Main configuration menu 18, 69-71, 73-78, 80, 84-96, 122, 124
Main configuration mode 79
Maintenance 97
Manual disconnect 21, 54, 55, 86
Master configuration port 3, 15, 16, 66-68
Maximum input power rating 5
MB 3
Memory board 5, 123, 132, 133
Memory expansion module 121, 123, 124
MicroPro 3
Minimum size print job 6, 56
Mirror 58
Missing characters 140
Modem 1, 5, 11, 46, 58-60, 96, 108, 142
Modem sharing 59, 96
Modular connectors 2, 14, 33, 35, 109
Module number 3, 16, 18, 47, 50, 52-54, 57, 59, 64, 67-70, 77, 94, 95
Mounting 5

N,O,P

Non-printable characters 19, 78
Non-volatile memory 3, 5, 6, 74, 76, 78, 80, 86, 88, 89, 91, 93, 95
Off Line message 58
Ohm meter 139, 140
On Line message 57, 59
Option accessibility 69, 71, 73, 75, 77-80, 85, 87, 89, 90, 92, 94, 96
Output flow control 64

Parallel-to-serial 46
Parity 3, 6, 7, 11, 16, 17, 20, 24, 48, 49, 60, 67, 72, 80-83, 138, 139, 140
PC COM port 17, 24, 137-140
PC Talk XVI 58
Peripheral-to-model 61, 63
Pin assignment 26
Plotter 3, 1, 3, 10, 11, 46, 51, 53, 96, 104, 108, 113, 115
Port designation 3, 6, 7, 11, 16, 19, 46, 66, 69, 72, 75, 84, 138
Port logical name(s) 15
Port number 3, 22, 47, 50, 52-54, 57, 59, 64, 73-76, 79-81, 83, 85, 86-88, 90-95, 141
Port Select Code 3, 6, 7, 15, 19, 20, 47, 48, 52-54, 56-60, 64, 66, 69, 70, 72, 78, 84, 86, 141, 142, C, 142
Port Select Mode 3, 7, 15, 20, 21, 48, 53-56, 69, 70, 72, 79, 80, 84, 86, 141
Port select sequence 22, 47, 48, 50, 52-54, 58, 64, 65, 94, 141
Port selection 7, 139, 141
Power consumption 8, 9
Power cord 14, 110, 117-119, 121, 123, 125-127, 137
Power supply 5
Power switch 14, 117-119, 121, 123, 125-127
Print schedule 22, 69, 70, 72, 84, 92, 93
Printer assignment 3, 6, 7, 15, 19, 22, 50, 52, 69, 70, 72, 84, 94, 95
Printer port 2, 6, 7, 11, 14, 15, 22, 40, 44-46, 50, 52, 53, 55, 61, 63, 75-77, 86, 92, 93, 116, 138, 139, 141, 142
Printer sharing mode 3, 6, 7, 16, 20, 35, 36, 38-45, 49, 57, 69, 80, 82, 96, 112, 114, 116
Protective ground 27, 30
Protocol 4, 9, 25, 28, 31, 35-42, 44, 46, 58, 107, 110-112, 114, 116

Q,R

Q-Modem 58
Queued 55, 56
Rack-mount 5
Radio and television reception 99
Radio frequency 99
Ramexec 13, 23, 24, 47, 52, 59, 141
Readme 11, 13
Results codes 60
Return authorization 97
Ribbon cable 120
RJ-11 2, 4, 8, 35, 38-44, 49, 112-116
RJ-45 2, 4, 8, 14, 33-37, 49, 107, 109, 111, 117, 127
RTS 17, 18, 27, 30, 33
RX 27, 28, 30, 31, 33, 36-39, 41-44
RX+ 36, 37, 41-44
RX- 36, 37, 41-44

S

Serial number 98
Serial port configuration 3, 11, 20, 24, 49, 69, 72, 80, 84, 140
Serial-to-parallel 46
Shielded 99
Single channel bus speed 5
Software drivers 98
Specifications 5, 99
Spooling 2, 3, 55, 61, 63
Status 18, 19, 69-72, 76, 78, 81, 82, 84, 86, 93, 98, 128, 138
Stop bits 3, 7, 17, 20, 49, 80-83, 138, 139, C, 140
Strobe line 25
Support software program 64

T

Technical Support 12, 97, 98, 137
Television reception 99
Telex 98
Temperature 5
Term 17, 18, 67, 137-139, 141
Terminal 3, 15-18, 27, 30, 33, 61, 67, 139, 140
Terminal emulation program 17, 18, 67, 139, 140
Terminating character 47, 52-54, 56-58, 64, 142
Timeout 3, 6, 7, 15, 20, 21, 48, 49, 54-56, 69-72, 79, 80, 84, 85, 86, 141, 142
Tran-x 1, 4, 25, 37, 42, 43, 45, 110, 111, 116
Troubleshooting 137
TX 27, 28, 30, 31, 33, 36-38, 40-44
TX+ 36, 37, 41-44
TX- 36, 37, 41-44

U,V

Unidirectional 2, 6-8, 20, 35, 36, 39, 40, 42-45, 49, 82, 96, 114, 115, 116
Upgrade 119, 121-128
User-defined 53, 78
User-programmable 6, 46
VAC 5, 14
Voltage 27, 61
Volts 28, 31, 139

W

Warranty 5, 97
Weight 5
Word Perfect 65
Word processing programs 64
Word size 3, 6, 7, 16, 17, 20, 48, 49, 59, 67, 80-83, 138-140
WordStar 3, 65

X,Y,Z

X-Modem 58
XMIT 20, 64, 72, 81-83
XON/XOFF 3, 6-8, 11, 16, 20, 28, 31, 36, 38, 41, 49, 60, 62, 64, 67, 80-83, 116, 140
XON/XOFF handshaking 11, 36, 38, 41, 62, 64, 80

OTHER BAYTECH PRODUCTS

Print Master 700 Series printer controllers are made in several different configurations satisfying various interface requirements. Each unit allows computers to share, select and/or contend for printers easily and economically, without switching cables. The internal buffering system allows simultaneous, high-speed input from all connected computers and output to all printers. Models come in six, eight, and ten port sizes. All have a 1 MB, dynamically allocated buffer that may be expanded to 2 MB. The **706A** and **708A** all parallel port models feature super fast throughput (up to 33,000 characters per second) and an expandable buffer size up to 4 MB.

Print Master II 800 Series peripheral sharing devices connect between your computers, printers, plotters, modems and other peripherals. These models allow any of your computers to access any of your peripherals -- and talk to other computers so files can be transferred and data shared. Plus, a built-in buffer spools output data until your peripherals can receive it, freeing your computers to go on to other tasks. Models come in four, eight, and ten port sizes plus all have 256KB buffer. Eight and ten port models have an expandable buffer up to 1.2 MB.

Model 24SII DES Data Exchange System is the fastest peripheral sharing solution available with throughput speeds up to 60,000 characters per second. The total number of ports may be expanded from 4 to 24 ports using 4-port I/O modules. Any port can be configured as an input or output port. The standard 1.0 MB buffer can be increased to 16 MB by user installed memory packages. Plus, using popular communications software, this unit allows for computer to computer high speed data transfer as well as modem sharing.

LaserShare is an intelligent printer controller that allows up to four or eight computers to send data to a single HP LaserJet Series II, IID, III, IIID, Brother HL8e* and HL8v*, or Wang LDP8 laser printer. LaserShare connects directly into the optional I/O slot of the laser printer. Power is taken directly from the laser printer so there is no need for a power cord. LaserShare can accept data from all ports simultaneous and is printed on a first-in first-out basis. All LaserShare models come standard with a buffer that can range from 256K to 4.0 MB. **LaserShare 4C** comes with four EIA-232C serial ports, **LaserShare 8C** comes with eight serial ports, **LaserShare 4E** comes with two parallel and two serial ports, and **LaserShare 4A** comes with four parallel ports.

* The LaserShare device for the Brother HL8e and HL8v is referred to as **LaserShare 4CB**. This device is available with four (4) serial computer ports and a fixed buffer size of 256KB.

Tran-x high speed parallel/serial converter products allow you to extend parallel cables to 1000+ feet and allow your network server, graphics workstation, or PC to send/receive data at speeds up to 46,000 characters per second. You can use the Tran-x Series with BayTech Model 24SII or LaserShare for the fastest long distance peripheral sharing solution available anywhere. Modular cabling provides simplicity in connections between remote devices. **Tran-x LPT-460** card plugs directly into your PC expansion slot. **Tran-x PS-02** connects to your PC's parallel port. **Tran-x SP-01** connects to the Centronics connector of a parallel printer. **Tran-x PS-02** connects to the DB-25 parallel port of the BayTech 700 Series Print Master or 800 Series Print Master II peripheral sharing units.

"500H" Series and the Model 24SII DAC Data Acquisition and Control units connect between one host computer and multiple peripheral devices. These models are often used in industrial process-control environments (e.g., for allowing control of multiple numerical or assembly-line machines), in exchanging data between point-of-sale devices, or for operating a number of laboratory instruments or business machines from a central computer. They are especially effective in adapting small low-cost personal computers to these applications. Each unit features six modes of operation which may be easily configured to your application. The **500H** series models are available with either 5 or 9 ports. The **Model 24SII DAC** unit is expandable from 4 to 24 ports in 4-port modular increments.

Telplex Models TX104 and TX108 are asynchronous statistical multiplexers which multiplex and demultiplex four or eight communications channels over a single channel. This single channel is typically a telephone line or cable. The **TX24** will multiplex and demultiplex up to twenty channels. Programmable features include serial port parameters (baud rate, word size, etc.), data flow control, user-programmable strings to be sent to an external modem, and remote diagnostics/configuration capability. These units must be purchased in pairs.

Telplex Model TX104M is an asynchronous statistical multiplexer with built-in modem. Four individual communications channels are multiplexed into a single dial-up or leased telephone line, cutting phone line costs to a minimum. The TX104M features a V.22 bis internal modem which provides reliable communication at speeds up to 4800 bps. With V.42 bis protocol, the TX104M provides error correction and Classes 2-4 data compression. Compatible with most computers, printers, or peripherals, the TX104M ensures rapid throughput, and offers a variety of user-programmable features in order to meet your specific application requirements.

Telplex Model TX108M is an asynchronous statistical multiplexer with built-in modem. Eight individual communications channels are multiplexed into a single dial-up or leased telephone line, cutting phone line costs to a minimum. The TX108M features a V.32 internal modem with MNP Class-4, which provides reliable communication at speeds up to 9600 bps.

Telplex Model BX9600 is an external asynchronous 9600 bps modem. The BX9600 features V.32 full duplex communication, automatic or manual dialing and answering, call progress detection of dial tones and busy signals, pulse or tone dialing, and a variety of other convenient features. The BX9600 interfaces easily to statistical multiplexers and other peripheral sharing devices to allow multiple users to share the modem. And its MNP Class 4 error correction ensures that the BX9600 provides accurate transmission.

The **BX2448** is a V.22 bis external modem which uses deal-up or leased telephone lines and comes equipped with many advantageous features, such as MNP Class 5 data compression, which enables data transmission at speeds to 4800 bps and, MNP Classes 2 - 4 error correction. A wide selection of user-programmable features allows you to customize the modem to your own individual application situation.

500 SERIES MULTIPORT CONTROLLERS

Included in the **500 Series** line of multiport controllers are units intended for the following applications:

Port Expansion (A-Series): Allows a single serial port on a computer to individually access up to 17 peripheral devices with full duplex communication.

Single Port Contention (DQ-Series): Allows up to 17 terminals to contend for a single port on a computer system.

Multiple Port Contention (B-Series): Allows either 6, 8 or 12 terminals to contend for either 3, 4 or 6 computer ports respectively.

Networking (F-Series): Networks either 5 or 9 ports together, i.e., allows any port to connect to any other port on the multiport controller. These also have host port control which allows a host computer system to make and/or break any connection between two ports on the multiport controller.

Broadcasting (G-Series): Will simultaneously broadcast whatever data is received on the host port out to either 4 or 8 peripheral devices while sending data from a single selected peripheral device back to the host device. This unit is also capable of operating in a port expansion mode such as the **A-Series**.

Auto T-Switch (T-Series): Allows a group of up to 6 terminals to switch between two computer systems.

NOTE: All ports on the **500 Series** are standard with EIA-232 ports. EIA-422 and Current Loop ports are optionally available.

If you have questions concerning any of BayTech's products, please feel free to call a BayTech Applications Engineer at either (800)523-2702 or (601)467-8231.

NOTES

NOTES